

# MOTOR AGE

Vol. V No. 18

MAY 5, 1904

Ten Cents



**WINTON**

WINTON—The car you think about first. That's because it is first in excellence and public favor. Embodies everything the ideal motor car should have, from powerful horizontal cylinders to an instantaneously effective emergency brake. If you want satisfactory service, get a Winton

**\$2,500 f.o.b. Cleveland**

Prompt deliveries. Winton literature upon request.

**The Winton Motor Carriage Co.**  
Member Association Licensed Automobile Mfrs.  
**CLEVELAND, . . OHIO, U. S. A.**  
New York Boston Philadelphia Chicago

WINTON AGENCIES  
EVERYWHERE

**WINTON is King Long live the KING**

**\$2,550**

With top and front glass, two Solar gas headlights, two Dietz Regal oil lights, tail light, horn with tube and full equipment; \$2.450 without top and front glass.

**See Our Exhibit at  
St. Louis Fair**



**\$1,450**

Having much the same outward appearance as our famous Runabout of 1903, but of higher power and capacity, and distinctly a powerful touring car—not a Runabout—the most highly developed car of its type—the perfected product of the oldest makers of motor cars in America.

# THE 1904 HAYNES

The oldest Automobile manufacturers in America. Originators of the only perfect balanced motors on the market. The make and break spark with magneto has been used on the Haynes-Apperson cars for years and is used on all the leading French cars, and is the only reliable ignition. Our cars have the horse-power, the speed, and reliability. If you want a reliable car place your orders now and get May deliveries. Write for Illustrated Catalogue

**THE HAYNES-APPERSON COMPANY, Kokomo, Indiana, U. S. A.**

**Members Association Licensed Automobile Manufacturers.**

**BRANCH STORE:** Chicago, 1420 Michigan Avenue

**NEW YORK, Brooklyn Automobile Co., 66 W. 43d St.**  
**BROOKLYN, Brooklyn Automobile Co., 1239 Fulton St.**  
**LOS ANGELES, J. A. Rosesteel, 649 Broadway.**

**REPRESENTATIVES:**

**BUFFALO, Buffalo Auto Exchange, 401 Franklin St.**  
**TOLEDO, Toledo Motor Car Co.**  
**BOSTON, G. M. Brown, 43 Columbus Ave.**

# ***KNOX* WATERLESS GASOLINE *CARS***

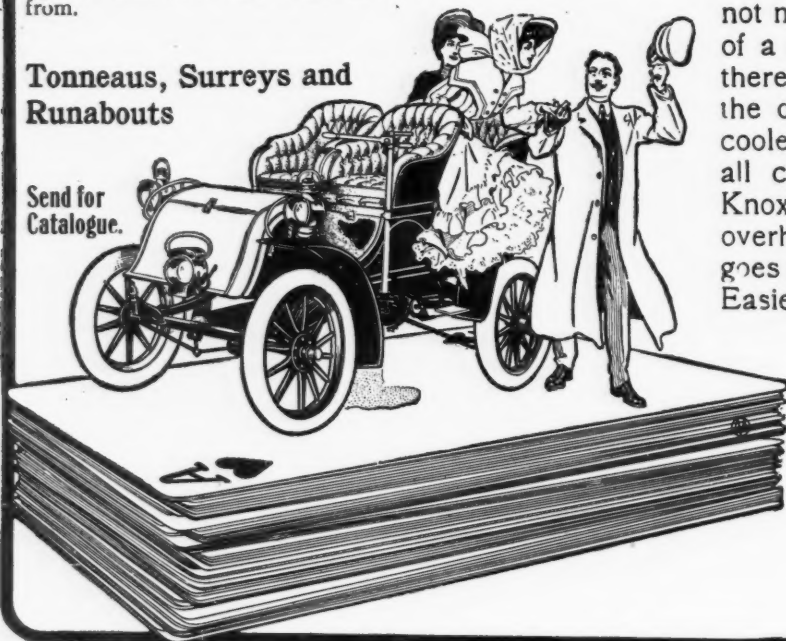
## **ARE ALWAYS ON DECK**

**(THE CAR THAT OBVIATES THE TOW)**

**Six styles Passenger Cars and six styles Commercial Cars to choose from.**

## Tonneaus, Surreys and Runabouts

**Send for  
Catalogue.**



Knox mechanism does it. Built for use, not merely for show. Yet their beauty is of a rich, fascinating type. In the Knox there is no water to freeze in winter. Has the only high power engine successfully cooled by air. Keeps cool under every and all conditions ALL THE TIME, by the Knox patent system of air-cooling—no overheating in summer. If it's a Knox it goes and keeps going 365 days in the year! Easiest to control; easiest to ride in—

## It's the Palace Car of the Day

There's luxury in running a Knox car.

**KNOX AUTOMOBILE CO.**  
**SPRINGFIELD, MASS.**

Member Association of Licensed Automobile Mfrs.

**Selling Agencies in all the  
Principal Cities.**



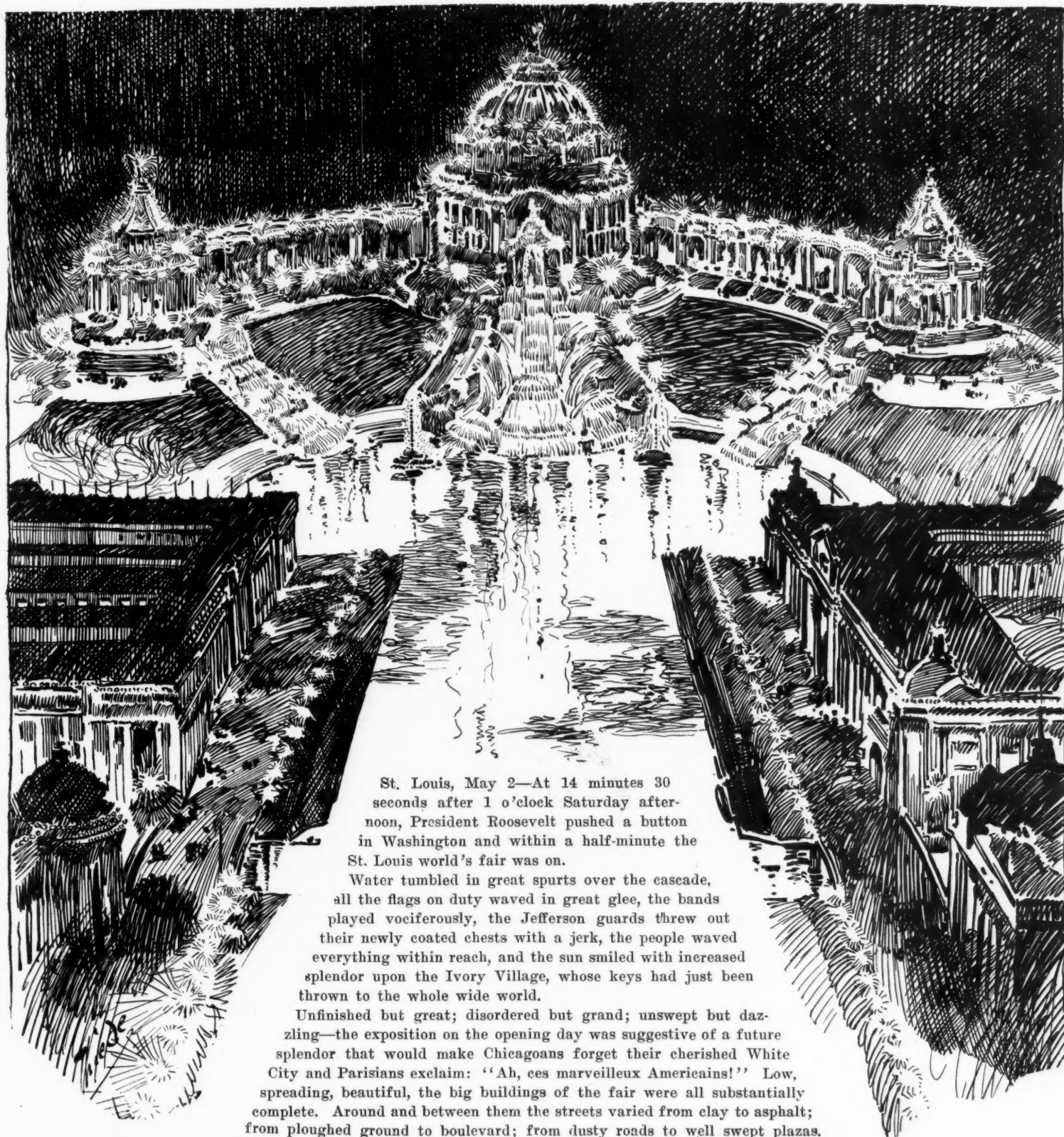
# MOTOR AGE

VOL. V. No. 18

MAY 5, 1904

\$2.00 Per Year

## OPENING OF THE WORLD'S FAIR



St. Louis, May 2—At 14 minutes 30 seconds after 1 o'clock Saturday afternoon, President Roosevelt pushed a button in Washington and within a half-minute the St. Louis world's fair was on.

Water tumbled in great spurts over the cascade, all the flags on duty waved in great glee, the bands played vociferously, the Jefferson guards threw out their newly coated chests with a jerk, the people waved everything within reach, and the sun smiled with increased splendor upon the Ivory Village, whose keys had just been thrown to the whole wide world.

Unfinished but great; disordered but grand; unswept but dazzling—the exposition on the opening day was suggestive of a future splendor that would make Chicagoans forget their cherished White City and Parisians exclaim: "Ah, ces merveilleux Americains!" Low, spreading, beautiful, the big buildings of the fair were all substantially complete. Around and between them the streets varied from clay to asphalt; from ploughed ground to boulevard; from dusty roads to well swept plazas.



THE TRANSPORTATION BUILDING IN WHICH ARE THE AUTOMOBILE EXHIBITS

The interior of the buildings presented a contrast of things done and undone in the bringing together of the world's products. No place was finished; but out of the great confusion of the day before had come a wonderful hiatus in the midst of preparation—a pause while St. Louis shook hands with the nations of men and bade them welcome. There was no disappointment in the incompleteness of the exposition. The finishing touches were not needed to show its extent and its equality with the other great universal expositions. At a glance it proclaimed itself a real world's fair and no first-class imitation.

Standing right by the main-entrance-to-be, almost the first of the series of principal buildings and all but one the largest of the exposition, the white-walled moss-green-roofed transportation building gave a fair idea of the stature of the fair and of the lesson it teaches of the progress in the arts and industries since the Columbian exposition at Chicago. Here was spread the promise of a collective display of the world's means of travel from the first to the latest, by land, water and air.

Here was the promise of an exhibition of motor cars greater than that of any other single medium of travel and one of the most extensive, most attractive and most progressive displays in the whole grounds. The buggies and the wagons and the boats and the trains had all been at the White City. One automobile had been there as a curiosity. Bicycles had been there by the scores and hundreds. Here almost 80,000 square feet are devoted to automobiles. The bicycle is here too in small but respectable array, but equal to it in importance as a collective display is the motor bicycle, proud in the honor of being younger brother to the new king of all the things that go.

No change in the affairs and ways of men could be more noticeable than that marked by this exhibit of means of transportation when it is compared by that which was behind the great gold doorway at Chicago. Even the two exhibitors of bicycles have those with motors above the pedals. Even the exhibitors of boats have those which were the outgrowth of the automobile industry. Even the exhibitors of carriages and wagons have automobiles within the same spaces. Even the exhibitors of harness and saddlery have appurtenances

for automobiles. Even the exhibitors of carriage and bicycle lamps and tires make up the greater parts of their exhibits with goods for automobilists. Even the exhibit of railway trains is encroached by the automobile railway inspection car.

In size greater than that of any other display of one class of goods; in character more brilliant and attractive than anything else in the building; in the method of its display more striking and gorgeous than the carriage, the train, the best display—if not the equal or superior in arrangement and embellishment of all the several exhibits at the fair—the automobile section when completed will dominate the transportation building just as now in its partially installed condition it dominates the other unfinished exhibits.

When President Roosevelt pressed the button that turned on the power and thrilled the great exposition with life, he not only inaugurated the latest and possibly the best of such expositions, but he announced to the world that the time for emancipation had come. Perhaps he did not realize it. His message of greeting to President Francis of the exposition and the latter's reply said not a word of it. But the supremacy of the automobiles in the transportation building represented at the moment of the opening, as it will during the

continuance of the fair, the only one thing within the whole grounds indicative of an actual and complete revolution of industrial and commercial customs.

The agricultural building presented the gradual development of an industry as old as the hunger of man. The horticultural building presented the ability of man to improve upon the bounties of God. Machinery hall presented the steady advance of an industry whose marvels are the accrued interest of centuries. The manufactures, varied industries and liberal arts buildings presented only the natural growth of the common phases of society and industry. The government building tells only the story of our international importance. The mines and metallurgy building presented the raw materials which mother nature had laid in store for man before he came to conquer the earth. The fine arts building presented the attempts of men of today to equal the achievements of men who were sculpturing and painting works of art while the red man of America was painting his face and scalping the works of God. The electricity building was but the expression of the new wonders of an industry that asserted itself a decade ago. The state buildings were simply the memorials of the political, agricultural, social and industrial hardships and triumphs of the commonwealths which make up U. S. A., Limited. The foreign buildings were but similar tributes to the new and old nations of men. The pike was but a graphical presentation of the extraordinary, the grotesque, the hilarious and the playfulness of nature and human nature.

The transportation building is the only one of all of the divisions of the exposition which presents a decisive innovation in the character of the things which it holds. Perhaps only of the whole fair does the wireless telegraph station equal it in the graphic suggestion of a sweeping effect upon the world's work. It is the world's work that the fair depicts. It is in these two phases alone that a marvelous shifting of methods since the Chicago exposition is broadly noticeable.

When Theodore Roosevelt telegraphed David R. Francis congratulations on the memorable occasion of the opening he extended greeting to the chief of an enterprise that out-classes all the world's fairs of the last 20 years in the existence in it of one particular charac-



PRESIDENT FRANCIS MAKES THE OPENING ADDRESS



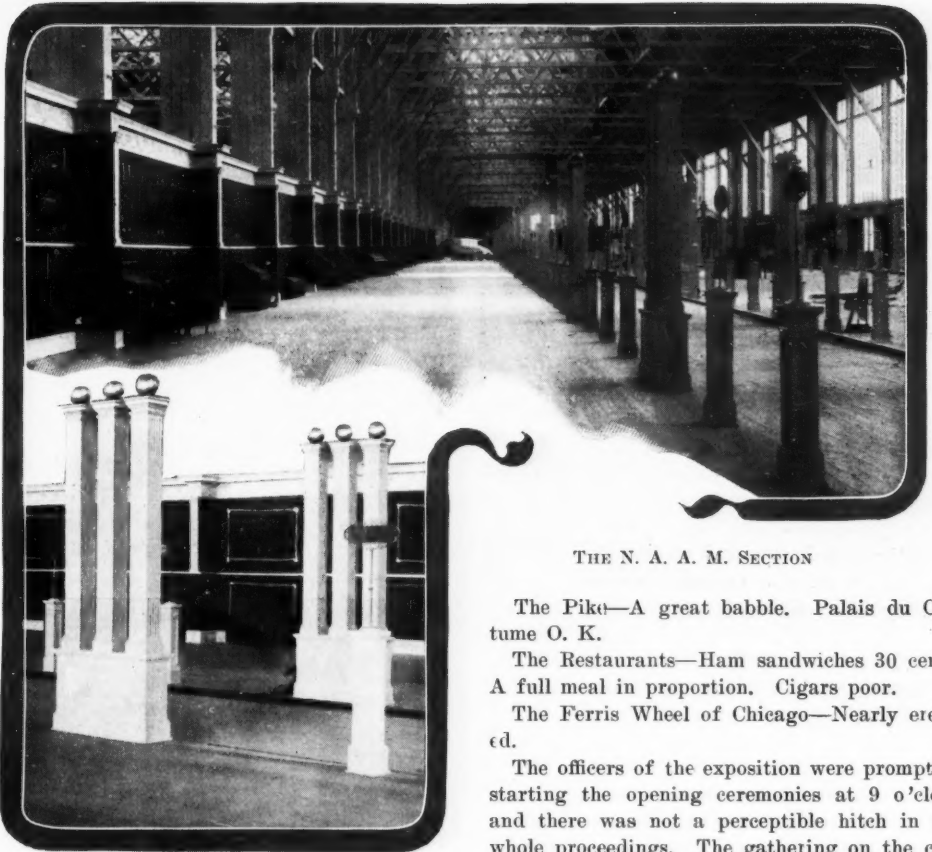
teristic showing a universal change in the ways of man—the revolution of his transportation.

The opening day was bright, fair and warm—a wonderful exception in the usual routine of spring sloppiness in St. Louis. The great disorder of the day before had been changed to order as much as possible. A hurried house cleaning of all the buildings rendered them clean and pleasant, if not complete in the matter of installed exhibits. The unfinished streets were cleared as much as possible of debris and the appliances of pavers and landscape gardeners. All work was stopped. St. Louis as a city locked the doors of its business and sent its citizens out to the fair to formally inaugurate the exposition they had watched grow stick by stick. According to local estimates over 200,000 flocked to the grounds to make the opening a memorable gala day.

There was not a great attendance from out of town. Officials, exhibitors, representatives from foreign countries and concessionaires were there, and also a fair number of people from closely surrounding country. The regular fair visitors had not arrived, the people recognizing the fact that the exposition not being complete it was not the time to spend much money in going far to see it. The crowd was of St. Louis, jubilant in the inauguration of the exposition so long hoped for, and with little desire to spend time inspecting exhibits, even had all the displays been in readiness. The occasion was a celebration pure and simple. Good nature abounded.

A hurried survey of the fair showed the buildings which were thrown open to the public to be in the following stages of completeness:

**Transportation Building**—All of the locomotive and railway and about half the carriage exhibits in place. Most of the foreign automobile exhibits on hand in crates ready for installation. Some of the boats ready. The American automobile section complete in decoration, etc., and a few of the cars installed.



THE N. A. A. M. SECTION

**The Pike**—A great babble. Palais du Costume O. K.

**The Restaurants**—Ham sandwiches 30 cents. A full meal in proportion. Cigars poor.

**The Ferris Wheel of Chicago**—Nearly erected.

The officers of the exposition were prompt in starting the opening ceremonies at 9 o'clock and there was not a perceptible hitch in the whole proceedings. The gathering on the central plaza was a brilliant one and was orderly. The officials were escorted by a parade of some consequence and more dignity, if not as much beauty and oddity as that of the Pikers in the afternoon.

President Francis called the assemblage to order and Reverend F. W. Gunsaulus, of Chicago, delivered the invocation. The first speaker was President Francis and he was followed by Director of Exhibits Skiff; Mayor Wells of St. Louis; Thomas H. Carter, of the national commission; Senator Burnham, speaking for the senate; E. H. Harriman, of railway fame; Commissioner General Michael la Grave, speaking for the foreign exhibitors; and Secretary of War Taft, acting as the representative of the president of the United States.

The speeches and ceremonies lasted until 15 minutes after 1 o'clock, when the exposition was formally inaugurated by the pressing of the electric button in Washington by the president, the machinery being set in motion and the water beginning to flow over the cascade—dirty, mud colored water that even the Chicagoans laughed at.

The parade of the people of the Pike was started at 3 o'clock.

The people of the transportation building were no less cheerful over the auspicious opening than the officials who jubilantly conducted

**Electricity Building**—Telegraph plant complete and other exhibits being installed.

**Machinery Hall**—Machinery of the fair in operation. Other displays awaiting completion of floor.

**Varied Industries Building**—Probably half the exhibits on hand for installation, some being in readiness.

**Horticultural Building**—Little in place, but building ready for displays.

**Agricultural Building**—Most of the central portion occupied and a sprinkling of exhibits around the walls.

**Government Building**—Practically in readiness.

**Manufactures Building**—Over a third of the displays ready and much unpacked stuff on hand.

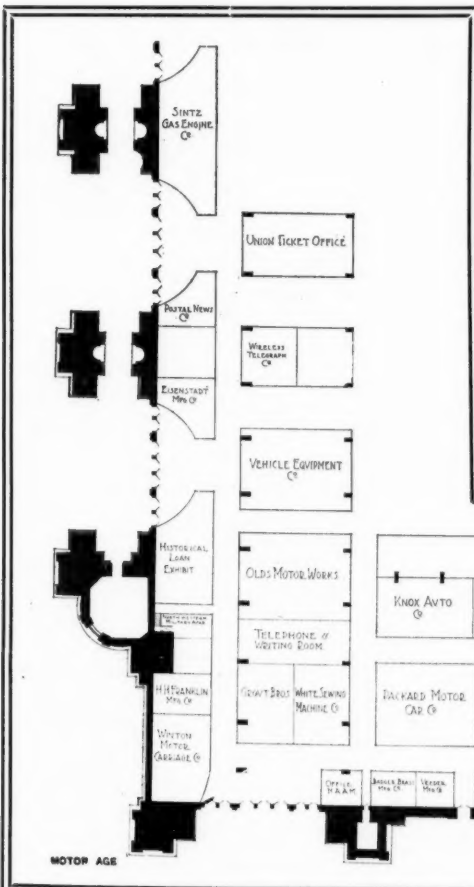
**Mines and Metallurgy Building**—Nearly half of the exhibits in place, but much unpacking to be done.

**Liberal Arts Building**—A confusion of exhibits being installed.

**Fine Arts Building**—Foreign displays nearly ready. Domestic displays not ready.

**State Buildings**—Complete, unfinished or just well started, as case may be. Steward of Kentucky building unable to serve anything but water.

**Foreign Buildings**—All stages of completion.



PLAN OF THE AMERICAN AUTOMOBILE SECTION OF THE TRANSPORTATION BUILDING

the ceremonies on the plaza, and of them all no class seemed more satisfied with the auspicious opening than did that composed of the small band of automobile folk on hand. To them it was not an improbable hope to see at the next world's fair the transportation building renamed. It was a fact to them that an automobile section was the dominating influence of the building—while even an outsider could not help to note that the National Association of Automobile Manufacturers section was the dominating influence of the automobile department.

The transportation building is a long, low structure, with most of its beauty on the outside. Structural iron work having been prohibited by its cost, the building frame work is of wood and the low spreading roof is one great forest of pine. In the center of the floor space stand the street cars, railway trains and the well known and much cherished B. & O. display of the evolution of the railway locomotive.

Flanking this at one end of the building is the exhibit of the carriage and allied trades. Then comes the exhibits of American automobile manufacturers who are not members of the N. A. A. M., and extending beyond this and around the corner to the center of the opposite end of the building is the collective exhibit of the N. A. A. M. Occupying a corresponding but smaller space on the other side are the transportation displays of European countries. Boats and odd lines complete the show. The bicycle exhibits are in the automobile section, being made by two concerns, one of which makes automobiles and motor bicycles and the other being engaged in the manufacture of motor bicycles.

The railway exhibit was substantially complete Saturday. Its character speaks for itself. There are no decorative features.

The carriage exhibit was partially installed and is a motley collection of all of the types, styles, patterns, etc., of horse drawn rigs and appliances supplementary to them. The embellishments of the exhibits has been individually carried out, resulting in all possible styles of exposition decoration.

The European transportation exhibits are characteristically enough substantially an automobile display, France, Germany and Italy evidently not caring to show anything but their respective automobiles, judging by the character of the goods already in the building. These exhibits are partially installed, but thus far no attempt has been made to decorate the spaces.

The N. A. A. M. corner is the exhibit de luxe of the building, if not of the fair. It is a family affair—an exposition home, built up in white and gold with maroon and green walls. It stands a monster unit in the building the criterion by which the degrees of excellence of setting of the other exhibits may be gauged.

Down the long side space are two aisles which separate the floor into a middle and two wall platforms, while across the end at a right angle to these are two wide long platforms, raised like the others about 6 inches and made of highly polished Georgia pine. At intervals heavy clusters of square fluted col-

umns in white trimmed with gold mark the extent and boundaries of these N. A. A. M. platforms. White pedestals between the columns carry brass signs bearing the association's and the exhibitors' names alternately. The walls are wainscoted with maroon burlap, above which to a white and gold cornice and frieze extends green burlap, both colors being paneled with gold beading. From the cornice to the ceiling of the building green and yellow panels of bunting hide the rather unsightly studding of the side walls of the building. Festooned across the top white and yellow bunting blots from sight the ugly rafters and trusses of the roof. This roof bunting was only partially hung Saturday, but was all ready for quick completion.

There are no divisions of the platforms. The exhibits are one. Over the polished floor are strewn Turkish rugs, while each exhibitor is furnished with a green couch, an oak desk

transportation department would contain an extensive display of automobiles. American makers were not disposed individually to spend the large sum of money which would have been necessary to make an equally comprehensive display, nor were they willing, on the other hand, to allow foreign exhibitors to take undisputed possession of the exposition field.

Experience at earlier expositions had shown that the arrangement, equipment and maintenance of space is, as a rule a costly matter, the expense, at the Pan American, for example, having been from \$3 to \$4 per square foot for equipment and space rental alone.

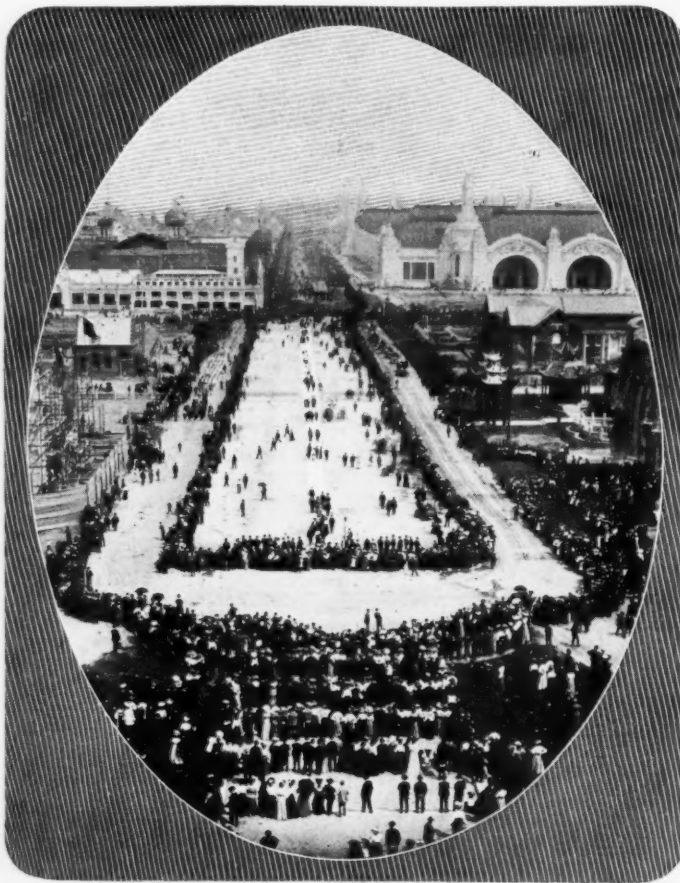
While uncertainty still existed the N. A. A. M. took the matter in hand, ascertained who desired to exhibit and then approached the exposition authorities with a proposal to make a great, collective exhibit of the products of those members of the association who cared to take part. The exposition people finally agreed to permit the association to make the allotment of four-fifths of the entire automobile exhibit.

Contracts were then entered into with the exhibitors, each agreeing to pay his share of the expense of equipment and administration. Then the real work commenced. Contracts were made for pillars, partitions, wall coverings, overhead decoration, signs, desks, chairs, rugs, lounges and every other essential feature, so that all the exhibitor would have to do would be to supply the cars or other goods. The actual work commenced a month ago. It is now complete, exactly as planned. Commander Baker, assistant chief of the department, while in New York recently declared it the most attractive exhibit in the transportation building. And yet all this has been accomplished at a cost to the exhibitors of 50 cents a square foot. The arrangement has proved the most economical stroke of business in the history of expositions.

The tale of the opening of the fair would not be complete without mention of the fact that the previously made rule to bar automobiles as well as carriages from the grounds has been rescinded. They will be allowed within the fair while the gates are open to visitors, but must stick to a prescribed route, which circles the exposition. In accordance with this

new ruling motor passenger busses which hauled people to the ground Saturday took their loads inside and made the circuit of the exhibition.

From dawn until dark, when the myriad incandescent spotted the deep jet above the ivory palaces, there was not a notable disappointment in the opening day of the Louisiana Purchase exposition. It was a great day for all concerned and none was more generous in complimenting St. Louis upon her achievement than those of other cities who had earlier in the game refused to believe the suggested extent and scope of the exposition. It is greater than it seems on account of the close piling of the buildings, which cuts off the general view from most every point, and it is a fortunate thing that at this exposition the automobile industry, of all the industries, should be represented so conspicuously. Equally fortunate is it that the American end of the new field is boldly and aggressively compared with the older European end.



WATCHING THE PARADE OF THE PIKE FOLK

and chairs to match, making a rich simplicity.

All this is uniform and it is all ready. It awaits but the automobiles to become the star feature of the building.

A few cars were in place Saturday. Many are in freight cars in the St. Louis railway yards and more are on the way. The exhibit will be practically complete by the first of June. To Grout Bros., of Orange, Mass., belongs the honor of being the first exhibitor on the spot with the goods. Others who had exhibits in their respective spaces Saturday were the White Sewing Machine Co., the Pan-American Polish Co., the Shelby Steel Tube Co., the Hendee Mfg. Co., the St. Louis Motor Carriage Co. and the Timken Roller Bearing Co.

In its work in connection with the automobile department of the St. Louis exposition the National Association of Automobile Manufacturers has rendered a great service to the trade. When the exposition was announced it was made known that the French section of the





The Great Arrow—1904

Pierce Stanhope—1903

Pierce Motorette—1902

The 1903 Arrow

Pierce Stanhope—1904

Two-Cylinder Arrow—1904

Pierce Motorette—1901

# MOTOR AGE

Published Every Thursday by  
THE TRADE PRESS CO.

1303 MICHIGAN AVENUE CHICAGO  
Telephone Calumet 7011

New York Office, 134 West 38th Street.  
London Office, American Publication Bureau,  
58 Manor Park Rd., Harlesden, N. W.



Entered at the Chicago Post Office as Second  
Class Mail Matter

Subscription, Two Dollars per Year  
Foreign Subscription, Four Dollars

Any Newsdealer may obtain Motor Age through  
the Western News Co., Chicago, or any  
of its branches, on a returnable basis

## HOW FAST TIMES ARE MADE

**A** FRENCH marine journal, commenting upon the recent motor boat race meeting at Monaco, states that while the splendid speed performances of some of the boats will be talked about for many days, it has found out that some of the reported times are quite subject to doubt owing to the fact that several times during the meeting some of the buoys drifted and that it was consequently impossible to take a correct time for a distance about which one had no definite measurement. In one particular case a small boat with a comparatively low-powered motor is credited with having covered a certain race in a time which figures out an average of 30 miles per hour. The maker of the boat laughed when he was informed of the time credited to his craft and said that it was not possible that it could develop even 20 miles per hour.

Of the fact that the few foreign motor boats which competed did not show superiority of speed, the journal says: "Let us not be too enthusiastic over our successes and too overconfident in the future. The fact that our neighbors do not make so many boats does not mean that theirs are not as good, even though they do not develop the speed of our Trefle-a-Quatre. The German and the English are making splendid craft, and the former especially must be reckoned with. Everybody seemed to have noticed the splendid running qualities of the foreign-made boats, which showed more steadiness than ours. This meeting has given our manufacturers an opportunity to discover many weak points in construction and will no doubt enable them to come back to Monaco next year with greatly improved racing boats."

## THE CUP RACE TEAM

**E** NTRIES for positions on the American team for the James Gordon Bennett international cup race have closed. There are three entrants. But one of these, the Peerless, is an original entrant.

The other two are later entries made after the announcement that the entry time would be extended a month. They are welcome entrants to replace the two original entrants who withdrew, Peter Cooper Hewitt and Alden Sampson II. One of these late entrants is the Winton

Motor Carriage Co.'s Bullet II. The other is Walter Christie's front wheel drive racer.

The story of the work of the Automobile Club of America in finally passing upon the eligibility of these candidates is on another page of this paper. There is little opportunity for comment upon the situation.

The outcome can only be guessed. It is a fairly safe guess, however, that the club's committee will accept all three of the candidates.

The Peerless 1904 cup racer is said to be fast enough to win the race. The Bullet is known to be fast enough. The Christie car is not as fast a machine as many others, but it is as fast as need be for driving a race over such a course as the Homburg road in Germany.

It appears that in each case the main test will be that of reliability and steadiness of running. It is to be hoped that all of the cars will show up well in this particular. The personal equation—the skill of the drivers—must of necessity take care of itself.

There is some little satisfaction in the entry of both the Peerless and Winton cars. These were the ones that represented us last year. It is truly good sportsmanship to go back into the big race with the same makes and, in the instance of the Bullet, with the very same machine.

We are not favorites to win. Our chance is a long one. But it is to at least be taken for granted that we will stick through the race and finish with the fast brigade.

Here's hoping that Winton-Peerless-Christie will be our representative in the international race and put up a game, hard fight.

## THE OTHER WAY ABOUT

**O** NCE in a while an automobilist becomes a party to an accident and flees before his identity becomes known. He is the man who has brought public censure upon automobilists as a class.

As a class automobilists claim to be gentlemen, and deny that the cowardice of an occasional person characterizes the whole class.

The public, the press and the authorities are often misled into this wrong judgment of all automobilists by the pattern of a few.

The best proof that could be offered of the fact that individuals and not classes of individuals must only be held responsible for cowardly acts, is found in the accident last Sunday which resulted in the death of an automobile dealer of Highland Park, Ill., for in this accident the usual conditions were just reversed.

H. S. Ringi, the victim, while driving on a country road, encountered a horse and wagon and was forced off the road into a ditch. Both he and the women who were with him were hurled out of the car and Mr. Ringi was caught under the car in the water of the ditch. He was killed.

Meanwhile the farmer had taken his way down the road, leaving one injured and one unconscious woman and a dying man behind.

Had the case been reversed the whole community would have been up in arms against automobilists.

Here was a coward, but being a farmer instead of an automobilist, the community accepted his cowardice as but the personal behavior of one man.

All farmers were not judged cowards by his act.

Is the community wise enough to see in this case the lesson that all classes of men are made

up of both gentlemen and cowards—and that the gentlemen predominate?

Is the community ready to adopt the policy of holding the man alone guilty—or will it persist in the condemnation of a class for the acts of a few undesirable members of it?

Automobilists of a rational mind ask no privilege that is not accorded all others. They ask no leniency from their just deserts. They ask simply to be judged by their individual acts and not by the acts of a few others of the same class.

\*\*\*

The daily papers have decided that ordinarily a woman cannot concentrate her mind; that the weakness that makes her ask questions would develop in handling an automobile and make her a dangerous driver; that the woman who has learned to do one thing well would prove the exception. Most women have learned to talk.

\*\*\*

No wonder the Britishers do not think much of our records and record-breakers. Their knowledge of our cars is so complete that their leading automobile journal pictures the 1903 Peerless racer as a Haynes-Apperson cup candidate.

\*\*\*

Buffalo's fire commissioner favors horse flesh power to motor power for moving fire apparatus, but then he probably had not heard of the New Jersey case where the fire horses were "all in" and an automobile took their places.

\*\*\*

A Philadelphia girl in a yellow automobile "reined up to the sidewalk" recently to rain blows on a yellow dog engaged in eating a man's trousers. Nice combination, all this—and in Philadelphia, too.

\*\*\*

Cleveland is to have an automobile quadrille for the benefit of a kindergarten. It will then be up to the Chicago Automobile Club to hold a motor car cake walk for the benefit of enjoined city officials.

\*\*\*

Like every local council every country newspaper now has its little automobile joke. One is for the benefit of motorists and the other for the rural reader, however.

\*\*\*

If St. Louis does not mend her streets a little that big world's fair automobile tour will develop into another endurance run after it crosses Eads bridge.

\*\*\*

A Detroit paper advises policemen to use bricks in stopping too speedy automobiles; in New York it is a felony to throw missiles at an automobile.

\*\*\*

With how many different makes of tires will the winner of the James Gordon Bennett international cup race be fitted this year?

\*\*\*

An 8-mile speed law is a hardship on a few motorists, but think of the pleasure it gives thousands of farmers.





# METROPOLITAN GARAGE GOSSIP



The Auto Import Co. is beginning to receive shipments of Rochet-Schneiders.

The first of the Olds tonneau touring cars has been received by the Oldsmobile Co.

A car a day was the record of Haynes-Apperson sales by the Brooklyn Automobile Co. last week.

The American de Dietrich Motor Car Co. reports sales of many de Dietrich cars during the past few weeks.

The Pioneer Automobile Co., agent for Yales and Couriers, expects shortly to begin the importation of a Belgian car.

The new 1904 Olds touring car reached the Oldsmobile Co.'s garage on Saturday and was driven by Assistant Manager Howell in the parade.

Norris Mason, of the Michelin Tire Co., sailed last Monday on a 3 weeks' business trip to Paris. The company is receiving weekly large shipments of tires.

Eight Fiats—six finished cars and two chassis—are en route to fill end of April orders taken by Hollander & Tangeman, who sold twelve cars the past fortnight.

The Richmond Automobile Co., agent for the Elmore, has moved its repair shop to the second floor and put in an elevator. Some of the light tonneaux have been received.

On the strength of the demand arising from the victory of the Orient in the Boston hill-climb, E. J. Willis ordered a carload of the buckboards in addition to the regular usual shipment.

Homan & Schultz have received the first of the National gasoline touring cars, which are of 20 horsepower and sell at \$2,000. It has made considerable of a sensation and is showing up well in demonstration.

F. E. Moscovies started on Monday in a Clement-Bayard fitted with continental tires on a business tour to St. Louis by way of Buffalo and Chicago in the interests of Sidney B. Bowman and Emil Grossman, the importers of the car and tires.

Joseph Corvan has added a third Knox single cylinder tonneau to his Clason Point automobile line. Some interesting statistics of the performances of the Knox cars on this line appeared in MOTOR AGE in a story of Clason Point inn as a resort for automobilists.

C. H. Tangeman has just returned from a flying trip to the St. Louis exposition. The demand for the Fiat, which the firm of Hollander and Tangeman represent in this country, has made it necessary for them to withdraw all the cars which they intended exhibiting.

Regular shipments of Northerns, making prompt delivery possible, are giving Peter Fogarty, their new agent, considerable trade. Mr. Fogarty points to the significant fact that though 120 Northerns were sold in Newport last year, none of them appear advertised in the second-hand sales columns.

Alexander Fischer has received the two 24-horsepower engines, which are to be coupled and fitted to Frank Croker's 43-foot launch, whose hull was in view at the Herald Square motor boat exhibition. Mr. Croker's flyer will be in the water within 30 days. Mr. Fischer received seven Martini cars this week.



H. W. Alden, of the Electric Vehicle Co., made the run from Philadelphia to New York last week in one of the new Columbia two-cylinder light tonneaux. He covered the distance in a little over 6 hours, which was just under the legal speed limit. But one stop was made—a halt of 40 minutes at Trenton for luncheon.

The Willis Automobile Exchange has been established at 220 West Thirty-sixth street by E. J. Willis, who sells sundries and is the agent of the Orient on Park place. His idea is to handle all makes of cars that may be placed with him on consignment. He believes that such an exchange will meet the approval of makers as well as the buying public.

A model of the Quinby aluminum body to be fitted to the Simplex cars is on view at Smith & Mabley's garage. It has individual seats in front and a surrey tonneau with side entrances. The rear seat holds three. There are also two folding seats in front of the rear seat, which are removable and fold automatically with the opening and closing of the side doors.

The Eisenhuth Horseless Vehicle Co., of this city, whose factory is the big Keating bicycle plant at Middletown, Conn., will have ready within 10 days a 60-horsepower car for the St. Louis exposition. By the middle of June thirty 18-20-horsepower touring cars, selling for \$2,000, or \$2,500 with top and full equipment, will be completed, and 30 days later popular priced runabouts will be ready, says E. L. Ferguson.

The American de Dietrich Motor Car Co.'s garage is now complete. It is kept open until midnight and presents a brilliant spectacle from the street with its electric lights and handsome interior fittings. The "clou" of the de Dietrich exhibit at St. Louis has been shipped. It is a voiture salon with a most elaborate limousine tonneau, having in its equipment eight electric lights, four revolving easy chairs, a cigar cabinet, a buffet de sport containing implements for several games, and other novelties. The car is of 30 horsepower, and has a wheel base of 12 feet. Its price is \$20,000.

One of the moving pictures at Keith's last week portrayed the famous climb of the Martini car up the Roche de Naye mountain in Switzerland, over an average grade of 23 per cent for a mile and a quarter. The biograph apparatus was placed on a train ascending the switch-back road and photographed the car at times following and at times climbing ahead of the train. The picture is startlingly vivid. One sees the car start from the plaza in front of a hotel, and all through its long climb ending at the snow covered summit. All

the motions of the operator are visible, including the changing of the speeds and the feeling of the radiator on the lookout for overheating.

## RECENT INCORPORATIONS

New York—Willis Automobile Exchange, capital \$25,000. Directors, E. J. Willis, A. W. Myers and M. C. Hard.

Brooklyn, N. Y.—Outing Automobile Co., capital \$30,000. Directors, F. L. Smith, Albert Bautte and A. L. Brougham.

Newark, N. J.—Breege Motor Mfg. Co., capital \$10,000. Incorporators, George A. Breege, Hugo Stummel and Joseph V. Weber.

Buffalo, N. Y.—Buyers and Manufacturers' Automobile Co., capital \$300,000. Directors, Carl Thorden, W. H. Van Deusen and C. V. Roty.

Boston—The Angier Co., capital \$10,000. To sell automobiles. Incorporators, William M. Barber, Oscar M. Angier and Eugene E. Kinsley.

Ogden, Utah—Intermountain Automobile Co., capital stock \$15,000. Dealers in automobiles, bicycles and machinery. Emory A. Smith, president; Levi H. Murdock, secretary, treasurer and general manager; Ralph M. Grange, vice-president and assistant manager; the board of directors is formed by the officers, J. Murdock and E. Smith.

Davenport, Ia.—Black Hawk Electric Co., capital stock \$10,000. To repair automobiles and deal in electrical goods. Officers: President, W. A. Fuller; vice-president, James E. Bayless; secretary and treasurer, John H. Eagal.

Portland, Me.—Church Balanced Impact Steam Turbine Co., capital \$750,000. To build and sell automobiles, engines and boats. President and treasurer, George F. Gould; directors, G. F. Gould, J. T. Fagan, B. M. Welch, B. S. Church, Plainfield, N. J.; T. C. Hillhouse, Yonkers, N. Y.; S. M. Hitchcock, New York city.

Providence, R. I.—Suddard Motorecycle Co., capital \$50,000. To manufacture motor bicycles, motors for automobiles and yachts. Incorporators: John E. Thompson, of Central Falls; W. A. Suddard, Dexter; B. Potter and William W. Nichols, of Providence.

Holyoke, Mass.—Holyoke Auto Storage and Repair Co., capital \$25,000. President, Joseph H. Lamay; treasurer, Frederick M. Holmes.

Ridgefield, N. J.—Motor Tally-Ho Co., capital stock \$30,000. To rent and repair automobiles. Incorporators: Nelson M. Ayers, Ridgefield, N. J.; Geo. H. Wright and H. S. Fairchild.

## BOSTON RACE MEET PLANS

Boston, May 2—It has been definitely decided to give one special event, in addition of course to the regular list, at the forthcoming meet of the Massachusetts Automobile Club at Readville on Memorial day. This is to be a 10-mile race open to all weights and powers. There are two prizes offered in either cash or plate, the first being \$250 and the second \$150. The idea of making the race open to all motive powers is to give the steam men an opportunity to prove the truth of their claim that steam is faster than gasoline, something they have been contending for over a year. The regular list of events has not yet been decided upon, but will consist of seven regular events, and one or two special races.

## PARADE IN THE

**N**EW YORK, May 1—Starting in a drenching rain, which began a half hour before the hour set for the formation of the line, and continuing over slimy park roads and boulevards and slippery asphalt pavements, the Automobile Club of America pluckily put through its scheduled parade this afternoon. Though announced as the "first annual" parade of the club the memory of the followers of the game goes back to a parade of the club some four or five years ago, when twenty-seven or perhaps it was thirty-four cars turned out and won for the club considerable patting on the back for its brave showing.

Despite the almost prohibitory weather conditions of the formation hour, which continued for a half hour from the start and so far as the going went lasted the whole afternoon, over 200 automobiles turned out. The MOTOR AGE man counted on the Riverside drive 226. Jervis, of the Sun, added some stragglers and put it at 250. Gerrie, of the Herald, who was stationed in the club windows, made it 215 entering the park and 178 surviving as the parade passed the club on its return.

It is a conservative guess to say that the number of paraders probably represented at the least but one-third of the cars which would have participated had the weather conditions been favorable. Word came to the untirified mud larks, who waited bravely in their appointed stations, that the garages were filled with owners who had intended to parade, but refused to take a drenching themselves, or submit their vehicles to a mud bath to make a Manhattan holiday.

"This rain is nothing," quoth A. L. Riker from beneath his dripping cap visor. "It is a cinch beside the Pittsburg run."

Nor did the storm seem to bother Augustus Post, king of the mud larks, another Pittsburg run veteran, a little bit, nor the brave array of White drivers that accompanied him.

It was indeed a shame, that rain; for despite the brief time allowed for preparation the committee and the tradesmen had worked with a will with every prospect of a turnout of cars to the number of at least 600 that would have stretched from the club at the Fifth avenue park plaza to Grant's tomb at the north end of the Riverside drive. The garage keepers had personally and by letter urged all their customers to participate. Some had appointed rendezvous at their garages that the "masses" might proceed to the starting point and take their places in line in bodies. Percy Owen expected a Winton squadron of forty and there was not a little fellow that



COMMERCIAL VEHICLE SECTION

had failed to recruit at least a dozen owners.

At 1:30 o'clock, the hour set for the assembling of the paraders, the MOTOR AGE man counted fewer than twenty cars in all at their stations, outside of a dozen assembled at the club to carry the officials and guests. At 2 o'clock, the hour set for the start, the American touring and runabout and the foreign car divisions had about fifteen each in line. Bravely and patiently their occupants waited, the victoria, limousine and canopy top-pers giving their open air unfortunates the laugh. For half an hour stragglers came slowly in and took their places in line. At half past 2 o'clock a courier came down the line and settled the mooted question of abandonment or postponement by saying the start would soon be made. Fifteen minutes later the leaders swung into the avenue from Fiftieth street and the parade was on.

The arrangements on the formation of the parade were excellent. The various divisions formed in the side streets off Fifth avenue, facing east. The guests' division met on Fifty-eighth street and headed by Winthrop E. Scarritt, president of the club, and Emerson Brooks, chairman of the committee, proceeded down Madison avenue to Fiftieth street and across to and up Fifth avenue, the various divisions falling in in order from First street to Fifty-sixth street. The commercial vehicles, with J. D. Rainer as marshal, formed

## MUD AND RAIN

in Fifty-seventh street, and after the pleasure vehicles had passed, proceeded west across Fifty-ninth street up Eighth avenue and fell in behind the pleasure vehicles as they emerged from the Seventy-second street gate of Central park, through which business wagons are not allowed to go, though special permission was granted for them to parade on Riverside drive, another exclusively pleasure parkway.

The officials and guests, who constituted the first division, were followed in order by the

Second division, American gasoline touring cars; Milo M. Belding, marshal.

Third division, American runabouts; Frank Eveland, marshal.

Fourth division, foreign built automobiles and noted racing cars; Robert Leo Morrell, marshal.

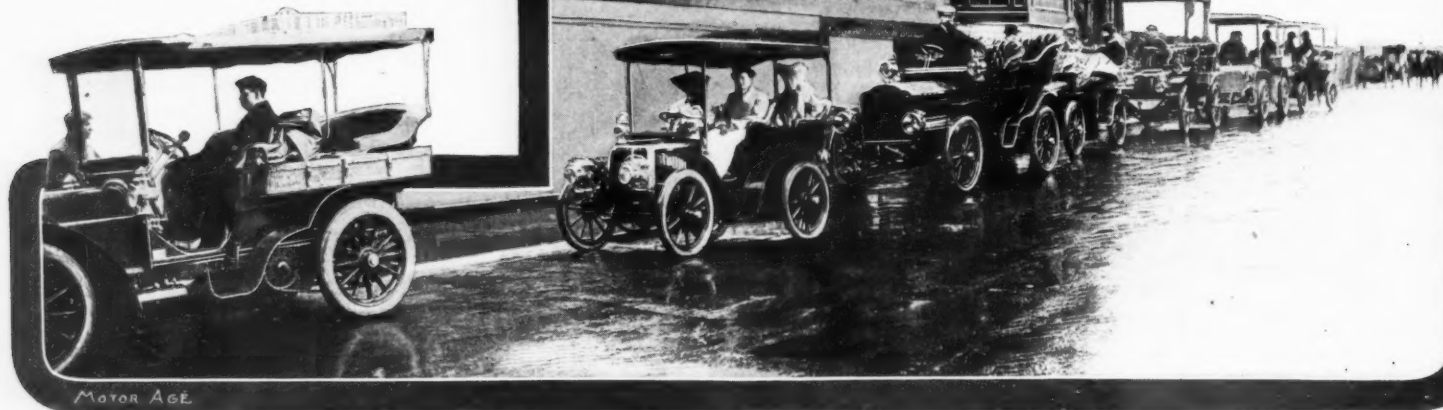
Fifth division, American steam vehicles; Augustus A. Post, marshal.

Sixth division, American electric vehicles; C. H. Gillette, marshal.

The seventh division, for electric cabs, under the marshalship of W. H. Brown, failed to materialize. The eighth division, for business wagons, joined the procession later on as above stated.

But three racing cars were on hand. B. M. Shanley, Jr., had out the 90-horsepower Mercedes record holder he bought from Mr. Vanderbilt. Joe Nelson drove F. A. La Roche's Darracq Blue Streak, and T. Brown piloted D. W. Bishop's Panhard racer.

Slowly the parading line entered the park, headed by two horse-mounted policemen and a squad of cycle cops. A dozen cars containing city officials and guests followed. It was the intention to show the municipal powers the utter absurdity of an 8-mile an hour limit. The horse and bicycle borne pacemakers were evidently leagued either with the authorities to aggravate the automobilists, or had been "fixed" by the committee to play the role of terrible exemplars of slow pace. Not only was 8 miles an hour a maximum rate of



A PART OF THE GASOLINE SECTION OF NEW YORK PARADE LINED UP FOR THE START



going most of the way, but it more often dropped to a crawl of 5 miles an hour. This state of speed prevailed until the north limit of the park parading was reached, and when in sheer desperation the pace was quickened to an endurable 10 and 12 miles an hour. It was a good lesson even if it did tax the patience of the paraders.

As the procession proceeded, though, there were some impatient breaks from the line, and at times on the Riverside drive there was a jam of cars from curb to curb.

Shortly after the entry of the parade into the park the rain ceased, but the dark clouds and misty conditions continued. It was tough crawling up the hills through the mud. Occasionally an engine which had been allowed to race became overheated and necessitated a

ing cars, sixteen American runabouts, twenty imported cars; then a mixed assortment of "butter-in" made up of all classes; twenty-four White touring cars in solid phalanx as one sees the Whites always in the endurance runs, followed by sixteen steamers of other makes, and last of all, the seventy-three business wagons heretofore noted.

On the homeward way the paraders became somewhat restless. Many left the ranks altogether or joined the escorting squadron of outsiders that drove alongside the regular procession. The return route was by way of Seventy-second street, West End avenue, Broadway, Fifty-ninth street and down Fifth avenue to Twenty-sixth street, where the remnants of the procession disbanded.

There was an attempt on the way down Fifth

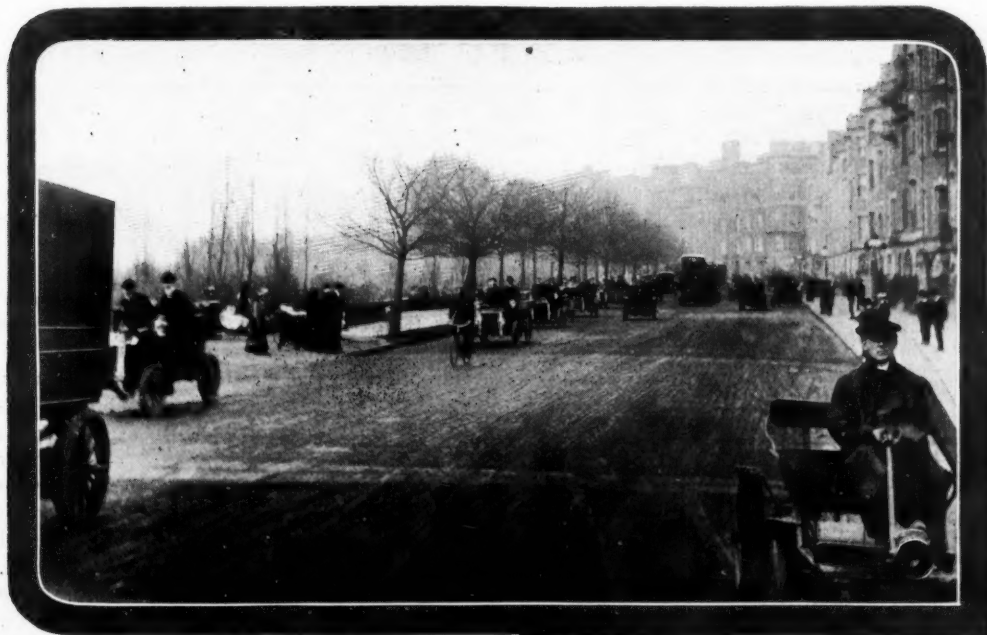
under automobile motor of 120-horsepower. Mr. Hope estimates that the hulls of the boats he is designing, despite the powerful machinery they will carry, will weigh something over 700 pounds. He expects that the winning craft will have to make close to 30 miles an hour, whereas the Napier's best speed, which sufficed to win all its races, was 22 miles an hour.

S. F. Edge will have the old Napier and is also building a 40-foot bronze craft which will be engined with a 120-horsepower, four-cylinder Napier motor. A third boat will be a 35-footer of 80 horsepower.

Besides the Hope and Edge entries, the Thornycrofts will have a light steel motor boat of heavy power, while Lord de Walden will also spring something of a surprise in the way of a boat to contest for the international cup. There is great rivalry between this concern and the Yarrow company, the builder of the Edge boats, so it will be small wonder if something fast is produced.

The great French steam advocate, the Gardiner-Serpollet company, is putting into a boat a steam outfit which is to develop 150 horsepower.

The race for the cup will take place on the Solent, July 30, over a course of 12 nautical miles. But before it occurs the trial races



stop. The helpless one was guyed by the whole line until he cooled off and chased back into his place in the parade.

As the procession moved out of the Seventy-second street gate of the park and moved across to the Riverside drive the largest, most varied and most interesting division of the parade fell in—the commercial vehicles. There were seventy-three of them—fifty-nine electrics, three steam, nine gasoline and two Fischers, with gasoline and electricity combined. They constituted an exposition of the many uses to which automobiles may be put in business. There were trucks for all purposes, department store and bakery delivery wagons, undertakers and florists' vehicles and a theatrical show advertising panorama. It was really a revelation of the extent of the use of vehicles in this city for commercial purposes. The Vehicle Equipment Co., the Electric Vehicle Co., the Pope Motor Car Co., the Knox Automobile Co. and the Olds Motor Works were all represented.

With the reaching of the Riverside and the partial appearance of the sun came scores of well laden pleasure automobiles out to meet the parade. So it was that the drive became gay from curb to curb with motor vehicles.

As the procession countermarched the MOTOR AGE man made a count, though he confesses to the possibility of having mixed in some of the outsiders with the paraders. There were eighteen cars about equally divided between domestic and foreign, devoted to the officials and guests; twenty-four American tour-



THE NEW YORK PARADE IN PROGRESS

avenue to keep half the street clear for the paraders; but before many blocks had been traversed cabs and carriages butted in and very much marred the continuity of the procession. It had been arranged to have the street cleared, but the parade got back nearly 2 hours behind time, owing to its late start and slow progress. The route was 12 miles in length. It had taken 2 1/4 hours to cover it.

#### BUILDING RACERS ABROAD

Great Britain is making elaborate preparations to defend its title to the Harmsworth international cup, which was won last year by S. F. Edge's Napier. Linton Hope, well known as a designer, and secretary of the Marine Racing Association, has already designed three boats to be built by the Hutton Motor Co. and which will be entered in the elimination races. One is to have a six-cyl-

among the aspirants for the honor of defending the cup will show what speed can be got out of them.

The makers have this year not only greatly reduced the weight of hulls, but have practically doubled the power. Napier was fitted with a 66-horsepower motor, while most of the new 40-footers will have at least 120 horsepower, so that extreme speed is anticipated.

A great boom has struck English and French boat shops, and, as in America, there is now an immense demand for motor boats of all sorts and sizes and for all purposes. The racing craft have been the means of advertising to the world not only the reliability of the gasoline motor, but the enjoyment to be had in motor boating—thus the boom, which must soon extend to the commercial world in even a more substantial manner than ever before.

## THREE CARS ENTERED

### Winton, Peerless and Christie Machines To Be Tested for the Gordon Bennett Cup Race

New York, May 2—Entries for the American team in the international race closed today. There are three candidates to be submitted to such structural examination and speed and endurance tests as the racing committee of the Automobile Club of America may demand.

Walter Christie formally entered this morning at the club the car of his own make and design, which was one of the competitors at Ormond last winter.

Peter Cooper Hewitt formally withdrew on Friday the candidate he has been building at the Trenton Iron Works, frankly stating that in its present state he did not feel justified in offering it for a place on the team.

Alexander Winton's Bullet II and Louis P. Mooers' 1904 Peerless racer had already been formally entered.

Dave Hennen Morris, George Isham Scott and W. Gould Brokaw, the three active members of the club's racing committee in the absence of its chairman, O. W. Bright, who is ill and unable to do any committee work, on the receipt of Mr. Hewitt's withdrawal promptly made announcement that they would leave this city on Wednesday night for Cleveland, where they would examine the Winton and Peerless candidates and submit them to such speed and road tests of not less than 100 miles as might be deemed necessary to determine their selection or rejection as members of the American team in the cup race. President Scarritt, ex-President Shattuck and William Golshall, a mechanical expert, will accompany them.

It was said at the club today that there would be no meeting of the committee before its departure for Cleveland and that the testing of the Christie car would not take place until the Cleveland trials had been completed.

The Bullet and its performances are well known. What results have been obtained in the matter of possibly increased speed and strength by its recent remodeling following the breaking of its crank shaft at Ormond remain to be seen.

The new Peerless has been already fully pictured and technically described. Mr. Mooers is sure that his latest creation is a great improvement over last year's cup candidate. That, too, remains to be demonstrated.

The entry of the Christie interjects a new factor that will start cup-chance discussion going afresh. All things considered it has made a showing entitling it to consideration. In kilometer trials at Ormond it scored 38 3-5, 36 4-5 and 37 3-5 seconds, respectively. In making the last two records it made 1:01 1-5 and 1:00 for the mile. In the 10-mile open it covered the distance in 9:35, being beaten by four Mercedes cars, as follows: W. K. Vanderbilt, Jr., 90 horsepower, 6:50; S. B. Stevens, 60 horsepower, 7:02 1-5; L. H. Bowden, 60 horsepower, 7:08; J. L. Breese, 40 horsepower, 9:29 1-5. The program-rated power of the Christie car is 30 and its weight 1,272 pounds, as against a range of from 2,000 to 2,375 pounds for its opponents.

It was also a starter in the 20-mile handicap, but did not finish. Its time, though, is said to have been 7:26 for the first 10 miles—a rate of 46 2-5 seconds for the mile and of 80 miles for

the hour. It would seem from this that the car had speed enough for a long distance cup candidate.

Since the Ormond meet the engine has been rebuilt until now, it is claimed, it will show 40 horsepower. Its present weight is given at 1,250 pounds. The car is of novel and radical construction. One casting forms the front of the machine, supporting the full weight of the engine on the axle. The engine drives direct without any gears intervening. The motor is a four-cylinder vertical. The construction is based on the theory that it is better to drive a car than to push it from behind. The steering is in the front wheels.

Walter Christie proposes to drive the car himself. He is the president of the Christie Iron Works, of this city, and is also known to fame as the inventor of the mechanism used in operating the turrets of the American battle-ships.

It was said at the works today, in reply to the MOTOR AGE man's questioning, that the car had had many speed trials on Long Island and Staten Island roads and that it had been timed at a rate of 85 miles an hour. It was also said that the present car had withstood all the hard use and abuse



WALTER CHRISTIE ON HIS RACER

to which it had been subjected in these trials without showing any weakness; and that the absence of vibration was a noticeable feature of its running.

There is a strong feeling among the few who have studied the car and followed its recent trials, that Mr. Christie has evoked a sturdy and speedy candidate for the team.

Just what will be the test to which the candidates will be submitted the committee refuses to say.

"To publish what the plans of the committee are in this respect," said an official of the club to a MOTOR AGE man today, "might through publicity defeat their being carried out. The committee fully realizes its responsibility to the American sport and industry in the matter of the selection or rejection of the candidates. If the team fails to make a creditable showing in the race it will be up to them for recommending the club's indorsement. In view of this, can there be a stronger incentive for as thorough a test as is practical or a better assurance to the public that it will be made?"

Secretary Butler will accompany the committee to Cleveland. William P. Kennedy, a consulting engineer, will also go in an advisory capacity. Mr. Kennedy, in partnership with Mr. Berg, a brother of Hart O. Berg, has a consulting engineering office at 503 Fifth avenue.

## NEW HUB-GOTHAM MARK

### Figure of 9 Hours 57 Minutes Made by Harry Fosdick Under Most Adverse Conditions

Boston, May 2—A new automobile record from Boston to New York was established by Harry Fosdick Tuesday and Wednesday last. In securing the record, Mr. Fosdick broke the one established by himself in October, 1902, when he made the trip in 10 hours 5 minutes actual riding time, and 13 hours and 30 minutes elapsed time. Mr. Fosdick then went out with the idea of securing the round-trip record established by Mr. Skinner in November, 1902, but made no special preparations. Taking his 1904 Winton he pulled out of Boston at exactly 2:30 o'clock Tuesday afternoon, when storm was threatening. Believing the storm only a shower, he got under way and reached the Old Wayside inn at 3:23. An hour later the machine went through Marlboro at a reasonable rate of speed, but once the other side of Marlboro the speed was increased, Worcester being reached at 4:08.

Three minutes were spent in Worcester replenishing oil tanks and then the start was made for the western section of the state. It was an hour later that the town of Warren was reached, and at 5:57 Springfield was the stopping point for a period of 8 minutes. The riding time to this city was 3 hours 24 minutes, which is the best time that has yet been recorded between the two points. The roads up to this point had been fairly good, as shown by the times recorded, but going through the Connecticut valley region things changed considerably. The footing all the way to Hartford was poor, and a mist hung over the land. Hartford was reached at 7:10 o'clock. Here for the first time since leaving Boston Mr. Fosdick and Mr. Shaw, his companion, got out of the car, for supper.

The party left Hartford at 8:22 o'clock, after a rest of 1 hour 12 minutes. The night was dark and misty, the powerful rays of the search light attached being necessary to penetrate the darkness. New Haven was reached 2 hours later, and 15 minutes were spent here. Bridgeport was reached in due season, and it was midway between that city and Norwalk that the automobilists heard the bells in the church steeples announce the midnight hour. At the latter place a lunch cart was called on and after a stop of 15 minutes the rush to New York was again taken up at 12:35 a. m. The ride from Norwalk to New York was interesting. The moon was far away, and had it not been for the lights on the car the road would have been missed. Fortune favored the men, however, and at 2:35 a. m. the car rolled over the Third avenue bridge, exactly 11 hours 55 minutes after leaving Boston, which was 1 hour 35 minutes better than the elapsed time on the previous ride. The actual time of riding was 9 hours 57 minutes and a gain of 8 minutes over the previous record, also established by Mr. Fosdick. Mr. Fosdick continued his drive to the Fifty-fourth street garage, which was reached at 2:45 o'clock.

At 4 o'clock that same morning the party again started out, this time bound direct for Boston. It was then raining, but the tourists thought it only a shower and so kept up. The going, however, was harder than imagined, the rain having turned the roads into quagmires, with mud and water running over the rims,



and after the hardest kind of work New Haven was reached at 8:30 o'clock. It was then seen that the weather conditions prevented a possible round trip record, so the party took it easy and at 1:20 o'clock the car pulled out of New Haven and started for Hartford, which was reached at 4:45 o'clock.

It was determined to put up here for the night. Thursday morning it was raining just as hard, but seemed to clear up about noon. It was decided to make a run for home, and so at 1:30 Thursday afternoon the start was made. The trip through the Connecticut valley was difficult in the extreme, the roads being miniature rivers, with water in places reaching up to the step, but even with that Springfield was reached at 3:45 o'clock. Thirty-five minutes were spent here and then another start was made for home. Two miles west of Palmer the first accident of the trip was experienced. This was a puncture in one of the front tires. An hour later Warren was reached and here an hour's rest was enjoyed. Worcester and the state roads were encountered at exactly 10 o'clock, and Boston was reached at 12:20 in the morning. The going on the half of the trip was disagreeable and had to be made with caution. Harry Fosdick feels well satisfied with the performance. On this as on his last trip he took occasion to have the time of his arrival and departure from the several cities properly recorded, so that should occasion require he will have absolute and indisputable proof of the time made.

#### BUFFALO CLUB PLANS RACES

Buffalo, N. Y., May 2—The first run under the auspices of the Buffalo Automobile Club will take place Saturday next. It will form at the city hall and will proceed through some of the principal thoroughfares to Hamburg, N. Y., where dinner will be served at 6:30. It is the intention to get as large a turnout as possible for the parade. The club house will be ready for occupancy about the middle of the present month and the opening of same will be a ladies' social tea in the afternoon and in the evening a stag with a vaudeville show and, of course, refreshments. The committee on tours held a meeting at the Iroquois and in addition to the first run and program for opening of the club house it was decided to have a stag run to Rochester June 18. It is the intention to leave Buffalo at 1 o'clock in the afternoon and allow 5 hours for the trip. The Syracuse Automobile Club will be invited to meet the Buffalo delegation at Rochester and the Rochester automobilists will be asked to arrange the program for Saturday evening and Sunday. It is proposed to leave Rochester on the return trip Sunday evening about 6 o'clock. The distance between Buffalo and Rochester is about 72 miles.

The Buffalo Motor Cycle Club will hold its first annual election Thursday evening next. The nominating committee has placed the following on the ticket: President, Dr. Marshall Clinton; vice president, F. H. Loverin; secretary-treasurer, Dr. Carlos E. Cummings; captain, J. C. Knapp; engineer, Clarence Becker.

The Buffalo Cycle Trade Association, in addition to the handicap bicycle road race Decoration day, will also conduct a motor cycle road race, but plans for the same are not completed. The association has left the matter in the hands of the Motor Cycle Club. George Hendee, manufacturer of the Indian Motor Cycle, has donated a silver cup as one of the prizes.

## WILL PARADE FOR BABIES

### Cleveland Automobilists Will Assist in a Motor Car Field Day for Benefit of Kindergarten

Cleveland, O., May 2—The automobile will have full sway in Cleveland on June 8. The event will be a spectacular parade of automobiles followed by pageant at the Glenville track, the like of which has never been seen in this country, it is claimed by the promoters. The Cleveland Day Nursery and Free Kindergarten Association, one of the best known benevolent societies in this city, is responsible for the plan.

Each year the association, which is headed by a number of well-known society ladies, gives an entertainment, the proceeds of which are devoted to the work of the organization. This year some of the ladies broached the subject of an automobile outing to members of the Cleveland Automobile Club and the scheme met with prompt offers of assistance. Several prominent members of the club have taken up the work of arranging for the affair and altogether it promises to be a huge success.

The opening feature of the day will be an automobile parade from the public square to the Glenville track. Every one of Cleveland's 1,177 automobilists will be invited to participate in the parade as well as in the events which will follow at the track.

The track program has been prepared by George Collister and it embraces a number of novel and interesting features. The first event will be the finish of the parade which will be on the track, the cars circling the big oval, four abreast. The second event will be a quadrille in which four little boys and four little girls will operate Baker runabouts through the figures of this event. Mr. Baker will be in charge of the event and will spend considerable time in drilling the performers.

The third event will be an obstacle race of a quarter of a mile. M. L. Goss will be in charge of arrangements. Then there will be a slow race for high powered cars. The rules will specify that the high gear must be used throughout, and the motor must not be stopped. This will give manufacturers a good opportunity of demonstrating the possibilities in throttling their motors. The fifth event will be an exhibition by inventors of racing cars. Among those expected to participate are Alexander Winton, with one of the Bullets; Walter Baker, with one of the Torpedoes; L. P. Mooers, with a Peerless racer; Frank B. Stearns, with a Stearns racer, and Rollin White, with one of the White steam racers. Some out-of-town inventors may be requested to participate and it is quite probable that a race will be arranged for some of these cars.

There will be a floral parade in which several prizes will be given for the best decorated cars. This event will be in charge of the runs and tours committee of the Cleveland Automobile Club, as will also be the arrangements for the parade. The seventh event will be an exhibition of old and new machines. Winton, White, Mooers, Baker and other manufacturers will be asked to operate the first machines they ever built and alongside of these cars will be samples of the latest models of these makes, presenting an interesting contrast.

After that there will be a 4-minute race with a prize to the person making a mile the closest to 4 minutes; no watches allowed. The ninth event will be a starting and stopping race, each car to have three passengers. Each car will come to the tape and unload passengers and the motors be stopped. At the pistol the passengers will load and the machine be started. This will be repeated at each quarter and the winner will be the operator who first has his machine at a standstill and the crew unloaded at the tape. The tenth will be a brake contest, the details of which have not yet been arranged, and there will be other events which are yet to be arranged.

The executive committee of the Cleveland Day Nursery and Free Kindergarten Association, to whose enterprise the project owes its being, is composed of the following ladies: Mrs. M. E. Rawson, chairman; Mrs. William McLaughlin, secretary; Mrs. A. C. Dustin, Mrs. George A. Garretson, Mrs. James A. Stephens, Mrs. Harvey D. Goulder, Mrs. James J. Tracey, Mrs. J. Homer Wade, Mrs. Luther Allen, Mrs. Oscar J. Campbell, Mrs. Guy Gray, Mrs. Henry R. Hatch, Mrs. Howell Hinds, Mrs. S. A. Raymond, Mrs. Carlos M. Stone. Mrs. Dustin is chairman of the subcommittee having the field day directly in hand, while Mrs. James A. Stephens is chairman of the committee whose duty it will be to invite Cleveland motorists to participate in the parade.

#### INDIANAPOLIS OBJECTS

Indianapolis, Ind., May 2—An endeavor is being made by the Automobile Club of Indiana to have the run from the east to St. Louis, Mo., pass through Indianapolis. The New England motorists will cross New York state and go to Pittsburg, while the New York and New Jersey contingent will join the former excursionists at Albany, N. Y., while the tourists coming from Virginia, Maryland and Delaware will meet the others in Pittsburg.

At present it is the intention of the eastern motorists to go from Pittsburg to Cleveland by way of Toledo and along the northern boundaries of Ohio and Indiana to Chicago, where the delegations from Illinois and Wisconsin will join and then the entire caravan will go to St. Louis.

The club and drivers all over this section believe the national run from the east should come through Indianapolis, by way of Columbus, O., and Richmond, Ind., thence to St. Louis, passing through Terre Haute, Ind., because of the fine highway offered by the national pike and the fact that the northern road is sandy and muddy. George E. Varney and William Moneypenny, of Columbus, O., who is the district member of the American Automobile Association, have been appointed to take up the matter of change in the route with the organizers of the run.

The annual election of officers of the club was held last week at the Commercial Club, and the following directors and officers were named: Directors, Howard Marmon, Alfred A. Barnes, Fred Ayres, George Pangborn, William Fortune, H. O. Smith, Gordon E. Varney, George Gay and Charles Sommers. William Fortune, president; George A. Gay, vice president; Gordon E. Varney, secretary-treasurer. There is talk of getting a new house and a garage, as the present accommodations are not adequate for the steadily increasing membership list.

## CHICAGO PLANS PARADE

### Local Motorists Want 1,500 Machines In Line—Club Run Well Attended—Fatal Accident

Chicago, May 3—If the plans now under consideration are carried out Chicago is to have an unsurpassed automobile parade about the middle of this month. Local motorists believe a promenade of about 1,500 motor cars through the principal streets of the city would have a far-reaching effect upon all classes of people. It would show that the automobile industry is rapidly gaining a leading place among the great industries of the country; that the newer method of transportation is making converts almost every hour; that there is power and influence behind motordom in a big city; that automobiles can be handled as perfectly as can a horse. President Farson went east especially to see the New York parade, held in the metropolis last Saturday, and Frank X. Mudd is in communication with Emerson Brooks, chairman of the committee on runs and tours of the Automobile Club of America, for information concerning the eastern parade.

Highland Park was the destination of the first of the weekly runs which the Chicago Automobile Club has planned. The excursion took place last Saturday and while only fifteen owners of cars responded to the call, it was nevertheless a pleasant and enjoyable affair. There were twelve ladies in the run. By the time the small number of touring cars and runabouts were started, several hundred people had gathered near the club house on Michigan avenue. Among those who took part in the run were: Mr. and Mrs. Frank X. Mudd, Frank Thompson and daughter, Miss N. Euzirre, William McMum, F. L. Donald, Miss Lerk, Sidney S. Gorham, the "Honorable" Al-ler S. Ray, mayor of Oak Park, and wife, Mr. and Mrs. Roy Simpson, Dr. and Mrs. Waldo Johnson, Mr. and Mrs. J. B. Burdett, Mr. and Mrs. T. J. Hayman, Mr. and Mrs. A. Frantzen, Henry Ullman, Dr. F. L. Greene, W. G. Lloyd, Ira M. Coke, Jerome A. Ellis, M. K. Frank, W. Leach, M. Keating, J. H. Wyeth, Jr., C. C. and H. J. Clucas.

Every member of the Chicago Automobile Club is now included in the A. C. Banker injunction suit against the city, concerning the numbering of motor cars. Judge Brentano issued an order yesterday which protects 236 members of the club. On the other hand, Judge Tuthill added ninety names of owners of automobiles to the list of motorists the police are prohibited from arresting for violations of the ordinance requiring operators to procure licenses.

An accident with fatal consequences occurred Sunday near Chicago Heights. H. S. Ringi, agent for the Rambler in Highland Park, was driving his car in company with his fiancée, Miss Florence Bornholdt, and one of her friends, Miss Elizabeth Canedy. When about a mile from Chicago Heights the party met a farmer's wagon. Mr. Ringi rode behind it for a while and then attempted to pass. Owing to the narrow roadway there was hardly room for two vehicles to pass, and the machine struck the farmer's wagon. In trying to back, and take his former position behind the wagon, Ringi went too far on the side of the roadway and the automobile swerved into a ditch and upset. The two ladies were thrown out of the

car, but Ringi, who had tried to stop the machine, was thrown in the ditch and his car fell on him, crushing him to death.

Since the Eagle Rock and Boston hill climbing contests, there has been some talk of promoting a similar event in Chicago. Hubbard's hill at Glencoe, though some 18 miles from the city, is the only spot that can be called a hill, but as a car would have to be started from a standstill, this would make the contest all the more interesting and would show the ability of the car and its operator to advantage.

There never has been such a contest in this country and Chicagoans feel that it would be a novel and useful trial.

### GETTYSBURG TOUR MAY 26

New York, May 2—Although it is rather early for many replies to be received to the A. C. A.'s circular letter to its members, announcing the itinerary of the club's spring tour, which will start on May 26 and be to Gettysburg and Harrisburg, Secretary Butler says that he estimates that a minimum of twenty-five cars will take part in it. The itinerary follows:

Thursday, May 26—New York to Philadelphia .....	Miles. 102
Friday, May 27—Philadelphia to York .....	91.5
Saturday, May 28—York to Gettysburg .....	40
Lunch at Gettysburg; afternoon to be spent in going over battlefield	
Sunday, May 29—Morning and luncheon in Gettysburg; afternoon, run from Gettysburg to Harrisburg .....	35
Monday, May 30—Harrisburg to Philadelphia .....	108
Tuesday, May 31—Philadelphia to Atlantic City .....	61.5
Wednesday, June 1—Atlantic City to Lakewood .....	67
Thursday, June 2—Lakewood to New York .....	83
Total .....	588

A representative of the committee is to go over the route this week, after which a circular will be issued giving full road particulars.

### AGREES TO MERGER

New York, May 3—The directors of the American Automobile Association met today to consider the proposed merger with the American Motor League. Of the mail votes that had been received 1,408 were found to favor the merger and 138 to oppose it. In view of this great majority and the supplementary endorsement of votes not received, which signified consent, there was passed the resolution that the merger become operative subject to the agreement with the American Motor League upon satisfactory constitutions and by-laws.

The directors of the A. A. A. will meet again May 18 to consider the report of the joint committee on constitution and by-laws. This committee is Messrs. Potter and Egan for the A. M. L., and Messrs. Butler and Valentine for the A. A. A. C. H. Gillette was made secretary of the St. Louis tour committee. The tour was given its real beginning by the receipt of the first two formal entries from Windsor T. White and Harlan W. Whipple. William Wallace, of Boston, came to the front as the first entrant for the Vanderbilt cup race, agreeing to abide by whatever conditions are made to govern the race.

It is said that Chairman Pardington has submitted to W. K. Vanderbilt, Jr., an outline of rules and conditions for the cup race and that the plan and scope of the event will be settled soon. Vanderbilt is to decide whether the contest will be open to the world or restricted to American cars.

## MOTOR BOAT BILL DEAD

### But When Congress Reconvenes It May Be Brought to Life—Full Text of the Measure

Washington, D. C., April 2—Congress has finally adjourned without taking action on the Grosvenor motor boat bill. It is understood that the bill will be taken up early in the next session and that strong efforts will be made to secure its enactment. While reposing in the house committee on the merchant marine and fisheries the bill underwent numerous changes and in order that MOTOR AGE readers may have a correct understanding of the measure as it will be presented to the house at the next session the full text of the amended bill is herewith given:

"That the act of congress approved Jan. 18, 1897—chapter 61, page 489, volume 29, United States statutes at large—amending section 4426 of the revised statutes of the United States, relating to vessels propelled by gas, fluid, naphtha, or electric motors, be, and is hereby, amended so as to read as follows: 'All vessels or boats carrying freight or passengers for hire, propelled by gas, gasoline, fluid naphtha, electric motors, alco-vapor, or other like motors, shall be, and are hereby, made subject to all the provisions of section 4426 of the revised statutes of the United States relating to the inspection of hulls and boilers and requiring engineers and pilots. Provided, that the same person may be licensed as both engineer and pilot. And all vessels so propelled, without regard to tonnage or use, shall be subject to the provisions of section 4412 of the revised statutes of the United States relating to the regulation of steam vessels in passing each other, and to so much of sections 4233 and 4234 of the revised statutes relating to lights, fog signals, steering, and sailing rules as the board of supervising inspectors shall by their regulations deem applicable and practicable for their safe navigation. Provided further, that applicants for license to operate and run a boat that comes within the provisions of this section may be examined as to color-blindness, deafness, and general qualifications as to skill and experience by the local inspector at the time and place where the boat is inspected. Provided further, that the supervising inspector shall formulate and adopt such rules for the inspection of vessels or boats coming within the provisions of this act as will insure the structural strength and stability of hull; their safety for use on waters to which adapted; also to require each vessel or boat inspected to be properly equipped with tight and stable tank or tanks for the carrying of the explosive liquid that furnishes the power, the stability and sufficiency of all appliances used in the generating and propelling power; that said vessel or boat shall be supplied with life-saving appliances in like manner as a vessel or boat propelled by steam of corresponding size and use; and the local inspector shall specify the number of passengers that may be safely carried by each boat inspected, and that all the above requirements shall be set forth in the certificate of inspection of each boat, said certificate to be framed and hung in a conspicuous place on board. Provided, that examinations for licenses for pilots and engineers for vessels or boats coming within the provisions of this act shall be limited to the kind and nature of power employed



on such boat or vessel, and a proper understanding of the meeting and passing signals and a sufficient knowledge of navigation to properly and safely run a boat for which a license is granted.'''

A perusal of the amended bill shows that it is radically different from the one originally introduced. Those who will be affected by the passage of the bill have the entire summer to muster their forces to wage warfare against the measure. If they would defeat the bill they should bring all their powers to bear, for there is no question but that General Grosvenor will strive hard to put his pet measure through.

#### DETROIT A. C. SUMMER HOME

Detroit, Mich., May 2—The Detroit Automobile Club has just made a deal by which it comes into possession of a new country club house located about 15 miles out on Birmingham road. It is a three-story frame building, which, when remodeled, will be a most agreeable place to spend the hot weather. A large dining room, next to a private dining place, and the kitchen, will be located on the main floor, while on the second story a ladies' parlor will be fixed up with a private dining room. In the rear of the second story floor the steward and his family will occupy three rooms. There is a large barn and a large grove will be efficient for picnics. The immediate neighborhood is picturesque, while the road leading to the house is good and will be steadily improved. The house committee is now making arrangements concerning the finishing touches. Most of the local motorists who have heard of the new acquisition seemed well satisfied and pleased at the idea of being able to rest in the shade in their own home.

While the officers do not intend to have a regular all-hour lunch counter, it is their intention to be able to serve light lunch at any hour and dinner every day at a regular hour. It is generally believed that this scheme will have a good effect and help increase the membership. An effort will be made to reach the 500 membership mark during this season. At present there are about 150 members in the club.

#### DISCOVERED THE TRICK

Providence, R. I., May 2—Now that spring has brought out the usual crop of automobilists on the roads, the police have begun to use some old but effective measures to secure the conviction of those inclined to be too enthusiastic when they come to a smooth road, and it became known about town that there was a certain part of Webster avenue which had been measured. Policemen at each end of the measured section with stop watches completed the arrangement. A newspaper reporter discovered the plot to trap automobilists and in a story told the details, and of the hopes of the police. On that particular portion of Webster avenue automobiles pass with the low speed gears in mesh and going at a rate which is exasperatingly slow.

Secretary of State Bennett has begun to issue certificates to the automobile owners of the state as fast as they apply for them. Up to the present time almost 200 applications have been received, and they come from all parts of the state. The automobilists are taking kindly to the new law and are thankful that no speed clause was inserted which might making touring conditions irksome.

## TRACK SCHEME GIVEN UP

### White Mountain Project of Senator Morgan and Others Abandoned, Temporarily at Least

New York, May 2—Senator Morgan's scheme for a 2-mile automobile track at Bretton Woods, N. H., in the White Mountains, has been temporarily abandoned owing to the objection of the president of the railroad, which was to build it. This the optimistic senator hopes to remove by argument some day. Pending the president's change of heart, however, Morgan now has begun the promotion of a great national hill-climb of Mt. Washington to take place in July.

The idea is to have the cars make the climb of about 8 miles from Glen Ridge Cottage to the summit. The contestants are to be divided into classes, so that stock cars will not be compelled to compete against stripped racers. It is to be practically an 8-mile road race up hill and a mighty good idea it is, too, senator.

Anderson & Price, managers of the Ormond hotel, Florida, and proprietors of the Mount Pleasant and Mount Washington hotels, are backing Morgan in the scheme. By the way, in view of the big increase in the patronage of the Ormond hotel arising from the beach races these popular bonifaces are building a new wing, extending down to the river. This will give a covered promenade and 100 additional bed rooms. A big rotunda is being made and a grill room established in the basement. Two new garages accommodating from seventy-five to 100 machines in all will be built before next winter. Rooms are already being bespoken for race week next January over one-half of them being engaged.

#### QUAKER CITY MEET

Philadelphia, Pa., May 2—Arrangements have now been perfected for an automobile race meet at the Point Breeze track on Saturday, May 28, under the auspices of the Philadelphia Automobile Club and the Philadelphia Automobile Trade Association. The track has been banked after the manner of the old bicycle track, though to a more moderate extent. The date set for the meeting has been timed so as to coincide with the visit of the Automobile Club of America to the Quaker city. The spring tour of the A. C. A. leaves New York Thursday, May 26, arriving at Philadelphia the same evening, and according to the itinerary mapped out should proceed west the following day.

As many members of that tour, however, may prefer to stay over in Philadelphia from Friday until Monday, when the A. C. A. will revisit this city, the race meeting occurring on Saturday afternoon will happen most opportunely for them.

#### SPEED CASE APPEALED

Washington, D. C., May 2—Counsel for Vincent Walsh, the young son of Thomas F. Walsh, the Colorado multi-millionaire, have filed a motion for a new trial in a higher court in their client's speed violation case. Young Walsh was convicted in the police court on three separate charges of violating the automobile speed laws in his Winton touring car and was fined \$20 in each case. The policeman who preferred the charges against Walsh swore that although he was standing on the sidewalk when Walsh went by in his car, his

long experience in such matters made him positive that Walsh turned the corner in front of him faster than 4 miles an hour, crossed the car tracks at a greater speed than 6 miles an hour, and, turning down a side road, sped away on the level at a rate of at least 20 miles an hour. Walsh denied all these charges and pointed out that his Winton was equipped with a Jones speedometer, which he was watching all the time. In the face of this the court ruled against him. Contending that their client's word was as good as that of a policeman, Walsh's attorneys have formally filed a motion for a new trial. The case has attracted considerable attention among automobilists and the outcome will be awaited with interest.

#### FRENCH MOTOR CYCLE RACE ON

Paris, April 23—The first stage of the motor cycle endurance test has been completed by almost all of the fifty-nine starters out of sixty-five who had entered. The first to reach Tours, 160 miles, was Foulon, on a Bruneau, who covered the route in 8 hours 23 minutes. Inasmuch as racing was prohibited, the drivers remained pretty well bunched most of the time, and only when about a half hour from Tours did some begin to put up the limit of speed permitted according to the regulations.

It is the severest test yet attempted in this country with motor-propelled bicycles, and is watched with great interest by the manufacturers and the public. The majority of people are under a wrong impression concerning the road. They believe it is the famous macadam upon which the annual bievle race is run, and say that under such circumstances the test loses value, as there is little glory in running a motor cycle even 750 miles over a level road. As with all roads leading to Rome, there are a great many leading to Bordeaux, and that the organizers purposely elected the worst they could find.

There are thirty-five different makes of machines represented among the fifty-nine starters. Among those machines which attracted especial attention before the start were the Knapp, Werner, Bruneau, Clement, Balleul, Gladiator, Minerva, Lurquin & Coudert, Carreau, F. N. and Aleyon.

#### WANT RECORDS ABANDONED

New York, May 2—The executive committee of the American Federation of Motor Cyclists has passed the following resolutions, aimed against the competition of heavy powered pacing machines with vehicles designed for road use.

Whereas, The table of American motorcycle records, as it at present exists, is unmeaning and misleading, being constituted of performances made on machines of abnormal power and construction, and such as are unfit for practical usage; and

Whereas, In order to conform with the regulations in effect in foreign countries, and for the desirable influence it will exert on motorcycle design and construction and competition,

Resolved, That the National Cycling Association be and is hereby respectfully requested to annul the motor bicycle records as they now appear on its books, and to henceforth entertain and accept no record made on a motor bicycle exceeding 110 pounds in weight.

Resolved further, That the National Cycling Association be and is hereby requested to enact and promulgate a rule or resolution that on and after January 1 next no motor bicycle exceeding 110 pounds in weight be admitted to open competition.

When shown these resolutions, A. G. Batchelder, president of the N. C. A., said that they seemed reasonable.

## MANY NEW REPAIRERS

### This Branch of the Trade Increases Rapidly At Cleveland—E. J. Pennington's Latest Failure

Cleveland, O., May 2—The number of repair people in Cleveland has increased at a tremendous rate now that bright weather has set in. Within the last couple of weeks half a dozen new concerns have started in business in various parts of the city until the game is getting to be almost as popular as was the repair business in the old bicycle days. Among the new concerns are the following:

H. A. Steere has opened the Steere Automobile Repair Shop at 182 Lincoln avenue, where he will do general repairing, storing and charging.

R. H. Gilbert has opened the Automobile Exchange at 574 Prospect street. Mr. Gilbert was formerly in charge of the repair shop of the Cleveland Automobile & Supply Co., and is an expert machinist. He will do general repair work, rebuilding, charging and store cars, and will also handle second-hand machines.

E. Gairing has a new repair shop at 23 Townsend street, where he will do general repairing and where he expects to build several cars this season, embodying some new invention which he has recently developed.

R. H. Magoon, agent for the Pope-Toledo car, is enlarging his Euclid avenue garage by the erection of a building 56 by 70 feet, which will be fitted up as a repair shop.

The Central Garage Co., East Prospect street and Watkins avenue, has taken the agency for the Marr car. The concern is headed by Frank R. Blackmore and Edward Striebing, old timers in the bicycle game.

The growing business of the Automobile Garage & Repair Co. has made it necessary to move into larger quarters. The company has leased a large building on Huron street adjoining the Winton branch, which will be fitted up as one of the finest garages in this section of the country. The company is Ohio distributor for the Autocar and has sold nearly 100 of these machines since the first of the year. It also handles the Packard and the Pope-Waverley electric and is state distributor for the goods manufactured and imported by Emil Grossman.

A new branch of the automobile business has been developed in this city this spring—that of the broker in new and second-hand automobiles. The business is conducted similarly to the real estate business. The broker secures lists of cars that are for sale and by advertising, soliciting and all around hustling, he brings buyer and seller together. Frequently a man who does not know anything about automobiles and desires to secure a good new or second-hand machine will apply to the broker for advice on the purchase of a car. On the whole the business seems to be a profitable one.

The regular dealers are willing to pay something to the person who will bring in a customer and help sell a car, while the "rake-off" on a second-hand car is sometimes quite large. The business requires little capital and there is no risk, either for carrying or in guaranteeing cars. One of the most progressive of these brokers is Harry B. Robinson, 404 Cuyahoga building. Another man who makes a business of selling cars on a commission basis is George H. Bowler, 503 Williamson building. For a number of years Mr. Bowler has con-

ducted a similar business in the sale of new and second-hand machinery and he has a wide acquaintance. He also has a warehouse where cars may be stored and displayed. Seymour Bros., Chamber of Commerce building, carry on a business of a similar nature.

A petition in bankruptcy has been filed against the Cleveland Motor Co. This concern was formed some months ago by E. J. Pennington, a personage who has gained much notoriety in various parts of this country and abroad through his attempts to exploit air ships, war automobiles and other extraordinary inventions and stock companies. The Cleveland Motor Co. fitted up palatial offices in one of the leading office buildings of the city and advertised a stock proposition on several inventions which it was claimed would revolutionize the automobile industry. One of these was a fore carriage or gasoline motor which could be attached to any type of vehicle. Another was an immense touring car said to develop 300 horsepower, carry twenty-eight passengers, have sleeping compartments and other unusual features.

The Cleveland Motor Co. succeeded in inducing two local manufacturing concerns to manufacture the two styles of machines. One of the concerns built several of the fore carriages and although they were very freely advertised in the daily papers, it is evident that they did not strike the popular fancy, as it is not known that any of them were sold.

### N. A. A. M. INCORPORATED

New York, May 4—Five meetings of the members and directors of the National Association of Automobile Manufacturers were held here in quick succession today in order to complete the winding of the red tape necessary in the incorporation of the association.

First the incorporators of the N. A. A. M., incorporated, held a meeting at which members of the N. A. A. M., unincorporated, were elected to membership in the N. A. A. M., incorporated. Then followed meetings of the members and executive committee of the old association, at which the formalities incidental to the transfer of the affairs of the old to the new body were gone through with.

Later the members of the new association met, agreed to take over the affairs of the old one, adopted a constitution and elected an executive committee, comprising the members of that committee of the old body. The executive committee of the N. A. A. M., incorporated, finally met and elected as officers of the said N. A. A. M., incorporated, the honorable gentlemen who had served in like capacity in the N. A. A. M., unincorporated. All of the committees were also re-elected.

The old-new executive committee having thus finally throttled the life out of the N. A. A. M., unincorporated, took up the routine work where it had been left before the funeral.

The freight rate committee reported that a brief had been prepared and had been presented to the railway official classification committee. The St. Louis exposition committee reported that so far as preparations made by the association were concerned everything was complete and that a presentable display of automobiles would be installed by the end of the week.

The show committee made a lengthy report, action on which was deferred until the June meeting, which will be held June 1 at the office of the association in the transportation building at the St. Louis exposition.

## NEW PRODUCING CENTER

### Indianapolis Claims To Be Important Motor Car Manufacturing Place—Retail Trade Also Thrives

Indianapolis, Ind., May 1—In justice to this city it must be said that few localities outside of Detroit, Cleveland and Buffalo are at present more prominent in the producing of automobiles than the Indiana metropolis. A fact which is probably little known is that one of the first automobiles imported from abroad was purchased by an Indianapolis motorist, S. D. Pierson, and it is even claimed that his car was one of the three first foreign automobiles seen in the United States.

It was a Benz gasoline machine, similar to the one exhibited at the Paris World's Fair in 1891, where a friend of Mr. Pierson saw it and then suggested to the latter to get one. Pierson relates that when the car minus the horse came to town there was not a soul who knew how to operate it and try as hard as they could it was not possible for the "experts" of the time to get the foreigner going. It was necessary to write to Mannheim for instructions. Charles Black was the first one able to drive the car, which was shown all over the states.

Since that time motoring here has progressed, slowly at first, and remarkably fast in recent years. This season from 1,500 to 2,000 cars are being made by the 800 workmen employed in the local factories. There are five of these: The National Motor Vehicle Co., the Premier Motor Car Co., the Marion Motor Car Co., the Pope Motor Car Co. and the Nurdyke-Marmon Co.

The National Motor Vehicle Co., which was organized in 1899, is located at Twenty-second street and the Monon railway. There are about 250 men employed in the factory, which expects to turn out about 750 cars this year. Plans have been prepared to enable the concern to manufacture 1,500 automobiles next year.

The Premier Motor Car Co., on Fort Wayne avenue, expects to turn out about 250 cars this season and will arrange to manufacture 1,000 next year. The Marion company has just entered the field after having tested a number of sample cars during several months. It is likely that not more than 100 cars will be manufactured this season, but it is expected that from 300 to 500 cars will be finished by the concern next year. The factory is located at Fifteenth street and the Big Four tracks.

The Pope Motor Car Co., which has the old Waverley bicycle factory, is busy making the Waverley electric cars. The plant is now being fixed up and after many changes and additions have been completed the Pope company expects to run about 800 workmen. The Nurdyke-Morman Co. built only six cars this season, which are used for testing purpose. A new four-cylinder air-cooled gasoline touring car is being developed now.

At present the factories are overflowed with orders and are not in a shape to turn cars out fast enough to suit their agents. The city trade is very brisk and it is figured that about 150 new cars will be owned in town before the end of the year. This would bring the total number of automobile owners to close to 400.

The Gibson-Short Cycle and Automobile Co. is one of the latest concerns to engage in the



retail automobile trade. It was organized last February. A new salesroom has been opened by the company on Massachusetts avenue. The Indiana Automobile Co. has found it necessary to enlarge its present establishment and others will probably imitate at the end of the season.

"The farmer is not only taking hold of the automobile," said Manager F. M. Martindale, of the Indiana Ford Co., the other day, "but he is showing how economically it can be run. The farmer does his own cleaning, most of his own repairing, and the expense is limited to about the cost of the gasoline and the oil that he uses. I do not believe that the automobile will ever be used by farmers to take the place of wagons for hauling, but the farmers are finding out that the automobile is the thing for visiting, hurried trips and pleasure. We are selling a great many cars to farmers. The outlook for the season in the city is very encouraging and the only trouble the dealer has to reckon seriously with is the impossibility in getting all the cars he wants and needs. We could sell double the number we will be able to get."

Indianapolis merchants have been slow to recognize the efficiency of the motor vehicle for commercial purposes, but its asphalt streets must eventually be the means of bringing about a change of heart.

#### FRISCO TRADE MATTERS

San Francisco, Cal., April 29—Charles Gorndt, special representative of the Winton Motor Carriage Co., who has been visiting Winton agencies and branch houses between Cleveland and San Francisco during the past 10 weeks, returned to Cleveland last Sunday. The larger part of the 10 weeks was spent by him with the Pioneer Automobile Co. here and at the Los Angeles branch house.

The Mobile Carriage Co. had the distinction of furnishing the automobiles which gave Prince Pu Lun, of China, the first taste of the novel method of locomotion. By special permission the automobiles were run to the mail dock and the nephew of the emperor of China and his suite stepped from the steamer into the motor cars.

The Pope-Toledo Touring Car Co. will take over the establishment of the National Automobile Co. and will handle Pope motor cars exclusively. Over twenty-five orders have already been taken for the big four-cylinder car, which is in great demand. The company will run a shop and garage under the management of Gus A. Boyer, formerly of the National Automobile Co.

Fred A. Jacobs, of the Rambler agency, has left for Kenosha. He will try through a personal visit and talk with the higher officers of the company to secure more shipments for this city. The Rambler agency has recently secured the agency on the Pacific coast for the National touring car.

At a meeting of the race committee of the Automobile Club of California, May 28 and 30 were selected for the race meeting and show planned some time ago. The show will be held under the grand stand at the Ingleside race track, where the betting ring is usually located, and the ground will be divided into forty spaces.

The program for the races has not been completed, but an endeavor will be made to induce eastern drivers to come for exhibition drives if not races. It is likely that on Sunday, May 29, a run in the neighboring country will be arranged.

## STREET CARS HARD HIT

### Pittsburg Concern To Inaugurate Extensive Motor Vehicle Business for Passengers and Freight

Pittsburg, Pa., May 2—The most important development in automobile affairs this spring in Pittsburg is the launching of the Auto Traffic Co., for which stock is now being subscribed. The company has been chartered under Pennsylvania laws to operate motor vehicles and has an initial capital of \$200,000 divided into 20,000 shares.

The company proposes to operate first on the so-called Liberty lines in the Squirrel hill and Morningside districts, and the Peoples lines, East Liberty and downtown. Free transfers are to be provided on all lines. Thirty-five miles is given as the probable mileage at the start, of which 15 will be for passenger lines. Forty vehicles will be run at first, fifteen for passengers and twenty-five for express service. Barn room has already been secured for eighty vehicles.

It is proposed to give express service hourly if necessary. The system includes both the horse and electric methods and will be followed later on by a freight service. It is estimated that a car will carry a maximum passenger load of sixty persons, ninety persons an hour, or an average of thirty persons an hour, making the average hourly earnings \$1.50. Twelve buses will be put on to run 18 hours a day each and have two crews. As the company will be at no expense for franchises, tracks, wires, power stations or politicians, it is thought that more than 50 per cent of the gross earnings can be saved.

Ten vehicles will be started in the express business, making 10 hours a day. These will earn, it is believed, \$15 each per day. According to these figures the promoters say they are sure of total yearly net earnings of \$82,605, or over 40 per cent on the initial capital, or about \$4,000 per mile per annum.

Pittsburg offers many advantages to such a company if carefully operated. Its street car service is probably as bad as that of any city in the country, for the lines are completely in the hands of corrupt politicians or companies which receive all their assistance from them. There are a half dozen cross town routes where street car lines or means of travel of some sort are badly needed, as it now costs 10 cents to get across, besides a wait of an hour or more frequently. The Auto Traffic Co. proposes to establish four different kinds of service as experiments. First, the American plan, without limiting the number of passengers, at a 5-cent fare; second, the European plan, with a seat guaranteed, at one and a half times the first fare; third, the school and works plan, of special service at special rates, for morning and evening hours only, also for amusements, churches, etc.; fourth, the club plan, for exclusive service at certain hours, for neighbors combining for any purpose.

#### MANY CHICAGOANS MOVE

Chicago, May 3—There have been many trade changes in location within the last two days, and Michigan avenue more than ever looks the real center of automobile trade within the three blocks from Thirtieth to Sixteenth streets. There are a number of stores outside of this territory, but the majority are located within a rather small radius on the avenue, where now no vacant stores exist.

F. P. Illsley's new store at 1329 Michigan avenue is not yet completed, but the agent for the Peerless cars is there and the Peerless machines are on exhibition. The Automobile Supply Co. has moved to 1339, and while the painters are still busy in fixing up the outside, business goes on inside as usual. The home of the White steamers is at 1404, the store formerly occupied by Pardee & Co., who have moved into the old Winton store. The new building which the Winton Motor Carriage Co. is having erected at 1251 will not be ready for a while, and in the meantime temporary offices were secured with the Hayden Automobile Co. at 1337.

Ralph Temple vacated his store at 293 Wabash avenue and has moved into the new place at 309, which is one of the finest show rooms in the country. The Greer Automobile Co. has moved from Wabash avenue to 1421 Michigan avenue and has secured the agency for the Crest. The Knox Automobile Co.'s agency will also join the Michigan avenue brigade, but not before the latter part of June, when the building now being built next to the new Winton location will be ready.

Arthur G. Bennett, the local agent for the Premier car, has secured the agency for the Mitchell runabout. The Cadillac Co. received a Clement-Bayard car last week. This is the first of these French made vehicles in Chicago.

T. L. Tincher, manufacturer of the Tincher car, is building a racing machine which he hopes will prove fast enough to travel a mile in less than 30 seconds. It is the intention of the local maker to build a motor of 140 horsepower, capable of driving the car at the rate of 144 miles an hour. The cylinders will be 7 by 8 inches, and the car is expected to be ready in July. If it proves satisfactory the racer will be entered in the speed trials at Ormond, Fla., next winter.

The Royal Automobile Co., of Harvey, Ill., has opened an office and show room at 425 Wabash avenue, where it is showing different styles of electric cars and a gasoline touring car with 16 horsepower opposed motor. One of the electric machines is a very small and smart looking runabout. The company was organized late last year.

#### CAPITAL TRADE CHANGES

Washington, D. C., May 2—An important change took place last week when W. J. Foss was promoted from the management of the Washington branch of the Pope Mfg. Co. to the general management of the Pope interests in Providence, Newport, and adjacent territory. The local management has been placed in the hands of C. Royce Hough, who was formerly connected with the local Pope branch, but who for the past 2 years has been with the Waverley factory. Mr. Foss has been manager of the Pope branch for the past 6 years and made a splendid record. He was prominent in all movements tending to better trade conditions and to push automobilism to the front. His promotion to the management of the Rhode Island branches of the Pope Mfg. Co., while a well-deserved one, is a distinct loss to the Capital city, where his influence was most potent. His successor, Mr. Hough, brings to the position an intimate knowledge of automobile affairs and a host of friends bespeak for him a fine record. Previous to Mr. Foss' departure for his new field the staff of the local Pope branch tendered him a most enjoyable farewell dinner at the Villa Flora club.

## THE READERS' CLEARING HOUSE

### IGNITION PRESSURE

Lowell, Mass.—Editor MOTOR AGE—Which air-cooled cylinder would keep cool the best, one  $3\frac{1}{2}$  by  $3\frac{1}{2}$  inches, or one  $3\frac{1}{2}$  by 5 inches? What should be the ignition pressure in a cylinder having 80 pounds gauge pressure? To what degree can compression be carried without causing premature ignition?—THOMAS McNAMARA.

The  $3\frac{1}{2}$  by 5-inch motor would cool better. With 80 pounds gauge pressure, the ignition pressure would be about 302 pounds. The permissible degree of compression in any particular motor depends upon the efficiency of the cooling apparatus, compression, projecting surface in the cylinder, and motor speed, so no exact pressure is universal regarding premature ignitions.

### HARDENING GEARS

Attica, N. Y.—Editor MOTOR AGE—What is the best process of hardening soft or mild steel gears for a sliding gear transmission set? Why are No. 6 pitch teeth being used commonly now instead of teeth of No. 8 pitch as formerly?—F. R. D.

Fill the hole and all parts to remain soft, with fire clay. Place gear in the case with new bone, covering it  $\frac{1}{2}$ -inch. Sprinkle the top with old bone. Heat for 16 hours and allow it to cool in the furnace over night. Reheat to blood red in the morning and dip in a brine of 1 pound of salt to a gallon of water. No. 6 pitch teeth are stronger than No. 8 pitch. The gear requires less face and is better able to stand the shock of a clash gear system.

### VALVE ADJUSTMENT

Medford, Mass.—Editor MOTOR AGE—What are correct points of the piston stroke for the opening and closing, respectively, of the inlet and exhaust valves? Is a good muffler easily made? What is the smallest practicable muffler that can be used with a  $4\frac{1}{2}$  by 6-inch single-cylinder motor?—A. E. C.

Generally speaking, open the exhaust when the crank pin makes an angle of 18 degrees with the cylinder center line, before completing the expansion stroke. Close upon reaching the dead center. Open the inlet at this point and close it as the piston starts on the compression stroke. Use a muffler with a capacity of six and one-half times the cylinder volume, with five outlets of  $\frac{1}{4}$ -inch pipe.

### MOTORS COMPARED

Kewanee, Wis.—Editor MOTOR AGE—We have two four-cycle stationary gasoline engines, one of which is  $5\frac{3}{4}$ -inch bore and 11-inch stroke, and the other of which is of  $6\frac{3}{4}$ -inch bore and 9-inch stroke. Which will develop the more power at 280 revolutions per minute? At what speed should each run to give the most efficient service? Both engines are well made and in good working order. Each run at the most suitable speed, should develop what horsepower?—DISHMAKER BROS.

The  $6\frac{3}{4}$  by 9-inch motor will develop one-eighth more power at 280 revolutions. The

speed of 280 revolutions is the proper speed for this motor. The  $5\frac{3}{4}$  by 11-inch motor should run to the best advantage at 240 revolutions. Under these conditions, with average compression, the former should develop 8 horsepower and the latter  $6\frac{1}{4}$  horsepower.

### USE OF PICRIC ACID

Meriden, Conn.—Editor MOTOR AGE—What is the correct amount of picric acid to use per gallon of gasoline to obtain the greatest efficiency? Is picric acid injurious to the motor, and will it injure a galvanized iron gasoline tank?

Use a saturated solution of the acid powder, as picric acid is but slightly soluble in gasoline. To the knowledge of MOTOR AGE there are no injurious effects outside of a very slight corrosion in the tank and carbureter. No action was noticed in the cylinder after using picric acid for several months. The action on galvanized iron is not considerable.

### CHARGING DRY BATTERIES

Belleville, Ill.—Editor MOTOR AGE—Will you kindly tell me how to recharge dry batteries, if this is possible?—JACOB WAINWRIGHT.

Recharging dry batteries is possible to a limited extent only, and is performed similarly to recharging an accumulator. Put the batteries in series with two 16 candlepower direct current incandescent lamps, with the positive wire connected to the carbon element of the battery, and charge through this system.

### FLOOR FOR CAR STABLE

Meriden, Conn.—Is it practicable to cover a wooden floor with asphalt or other fireproof coating for the support of an automobile? I understand that a ground floor is better, but I have a wooden floor already, and wish to cover it to convert the room into an automobile house.—G. A. FAY.

An asphalt covering would be attacked by oil and gasoline. A sheet zinc covering is sometimes used with the joints soldered and a flange projecting upwardly around the edges to retard the oil and water that may accumulate. Advertisers listing mineral wool can probably supply a covering of this kind that will be suitable.

### INCREASING POWER

Owosso, Mich.—Editor MOTOR AGE—I have a runabout with a  $4\frac{1}{2}$  by 6-inch motor with a float-feed carbureter. Is there any way to make the engine develop more power than it does now? Would it be of advantage to put a plate on the end of the piston to increase the compression, and would the machine stand this extra compression? Would the addition of such a plate be apt to cause premature ignition? How can the speed of the motor be increased? How should the carbureter be set to give the best service? What should be the maximum lift of the exhaust and inlet valves, and at what points of the piston stroke should these valves be respectively open and fully seated? What is the best method of repairing a single-tube tire which is punctured by a large nail? Is the use of picric acid in gasoline advisable, and what is the method of using this acid?

When I am out with the car in a rain storm I continually receive shocks from the spark advance lever and through the steering lever. How can this be remedied?—CECIL O. POST.

Try a plate to increase the compression, but place it on the cylinder, if possible, so as not to throw the reciprocating parts out of balance. If the compression is already as high as the motor will stand, it will cause premature ignition. Experiment only will show the proper carbureter adjustment for the particular machine. Open the exhaust valve 5-16-inch from the end of the stroke and close on the dead center. Open inlet valve as the exhaust is closed and keep it open until the piston starts back on the compression stroke. The lift of a valve should be one-fourth of the small diameter of the seat. The single-tube tire should be plugged and vulcanized. Picric acid is slightly soluble in gasoline. Make a saturated solution of the acid salt and filter before pouring into the tank. The electric shock is caused by self-induction in the primary circuit. Use no grounded wire in the primary circuit, and insulate the circuit breaker.

### PRESSURE LUBRICATOR

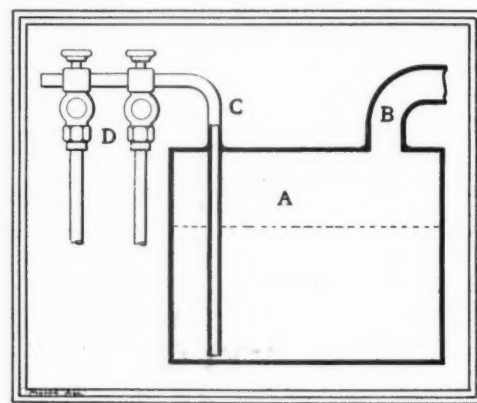
Kenosha, Wis.—Editor MOTOR AGE—Will a lubricator made on the principle shown in the accompanying drawing operate well on a four-cylinder motor? The reservoir is indicated at A, while B is a  $\frac{3}{8}$ -inch iron pipe from the exhaust pipe, to supply a suitable pressure; C the delivery pipe, of  $\frac{1}{8}$ -inch brass and extending to within 1-16-inch of the bottom of the reservoir; and D sight feeds of usual construction. Should the pipe B, from the exhaust, be fitted with wire gauze to protect the oil from fire? Would an air pressure be better than the exhaust pressure?—J. B. WISE.

Pressure from any source can be used to advantage. It is advisable to place a pressure regulating valve between the source of pressure and the oil tank. In the oil pipe the line between the tank and the feeders put a check valve to prevent flow by gravity or siphoning, and also to check back pressure. Wire gauze would be advisable, although not necessary, if the pipe to the oil tank is 4 feet or more in length. It is preferable to use  $\frac{1}{4}$ -inch actual diameter copper pipe between the tank and the feeders to prevent clogging and to facilitate the flow in cold weather.

### BORING VALVE CASTINGS

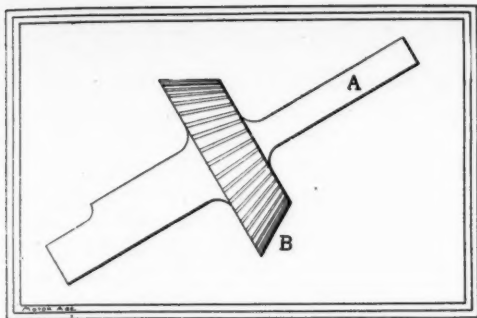
Wing, Ill.—Editor MOTOR AGE—I have had some trouble in boring out valve castings to form the valve seat. What is the best kind of tool to use for such work? The valve chamber castings are cast independently of the cylinder and are comparatively small, being for a 4-horsepower motor.—W. B.

Face off the cylinder and the cylinder head. Drill both for the bolts and also two dowel



LUBRICATOR SUGGESTED BY J. B. WISE





PLUG SUGGESTED BY J. C. HIGDON

pins. Rough bore the valve seat and insert a steel plug with a hole the size of the valve stem. With this as a pilot drill a guide for the valve. Remove the plug and with the tool shown in illustration bore the valve seat. The cutter B, is guided by the forward pilot A, which is rotated in the hole drilled for the valve stem.

### MOTOR SPECIFICATIONS

Hartford City, Ind.—Editor MOTOR AGE—I have a double-opposed cylinder motor of 5¼-inch bore by 5-inch stroke, the compression of which is from 45 to 50 pounds. The fly wheel is 22 inches in diameter, and weighs 120 pounds. What should be the size of the exhaust valve opening, and what should be the lift of the valve? Is the fly wheel large and heavy enough? Is the compression sufficiently high? What size should be the exhaust pipe running to the muffler? What horsepower should the engine develop with the compression and fly wheel mentioned? At what point of the piston stroke should the exhaust valve begin to open, and how far should the piston travel before the valve is fully open?—A. C. CRIMMEL.

The exhaust valve should be 1¾ inches in diameter, and should lift 7-16-inch. The fly wheel could stand another 25 pounds to advantage and the compression should be increased to 80 or 85 pounds. Use a ½-inch wrought iron pipe which has an inside diameter of 1½ inches for the exhaust. A piece of 2-inch pipe is preferable, but will weigh considerably more. The motor should develop 12 horsepower at 950 revolutions per minute with the increased compression, and 7.2 horsepower as it is now. Open the exhaust 11-32 of an inch before completing the firing stroke and close on the dead center. Open the inlet at this point and allow it to close after the piston starts to return on the compression stroke.

### WIRING MULTIPLE MOTOR

Anacortes, Wash.—Editor MOTOR AGE—Will you explain the system of wiring a two or more cylinder motor so that but one induction coil is used?—E. L. K.

A two-cylinder opposed motor with the cranks at 180 degrees, or a two-cylinder vertical motor with cranks parallel and on the same side of the shaft is wired as shown in the illustration. Either use a cam with two elevations and one brush as shown, or one with one elevation and use two brushes. In the latter case the two brushes are connected by a wire. The brushes are insulated. Either arrangement will operate the coil twice to each revolution of the cam, or once in each revolution of the motor. The two secondary wires are connected one to each spark plug. This sparks each cylinder every revolution and is effective in only one as the other is exhausting a burned charge. The single coil for use on a three or more cylinder motor consists primarily of interrupting the primary circuit as many

times as there are cylinders, each revolution of the cam shaft. A distributing arm communicates the secondary to the proper cylinder. This method will be illustrated in MOTOR AGE in a future issue.

### NON-FOULING PLUG

St. Louis, Mo.—Editor MOTOR AGE—One of the greatest defects of the spark plug is its tendency to "go out of business" upon the application thereto of a slight quantity of lubricating oil during operation of the motor; and in practice it has been found almost impossible to prevent more or less lubricating oil from being forced past the piston-rings, and this oil almost invariably causes a coating of carbon upon the points of the spark plug and thereby fouls it.

So common has the fouling of plugs become that many operators cannot run their cars 5 miles without fouling one or more plugs, and in many instances the fouling is caused by an excess of lubricating oil in the crank-chamber, although, of course, in numerous cases fouling has also been caused by too rich a mixture.

The writer has discovered that if the points of the spark plug are located quite a distance from the adjacent wall of the cylinder or valve-chamber to which the plug is applied that the excess of oil will not reach the points and the plug will therefore remain clear until fouled by rich mixture.

In the illustration the spark plug is provided with the usual threads by means of which it is screwed into the cylinder or valve-chamber, but has an extra long shank at its inner end, which projects a considerable distance beyond the wall, so that during use the excess oil will follow the wall in its passage to the exhaust-opening and will not reach the points of the plug.—JOHN C. HIGDON.

### MUFFLER DISPOSITION

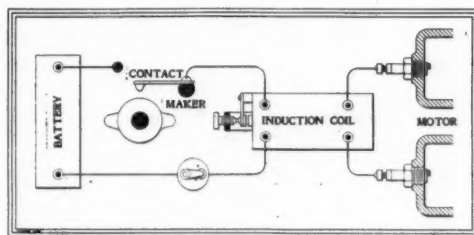
Altoona, Pa.—Editor MOTOR AGE—In case a suitable position is found for the muffler, say 18 to 24 inches from the motor, will it serve as efficiently and noiselessly as though it were placed but 4 inches from the motor?—J. U. B.

Placing the muffler at the greater distance from the motor will increase the efficiency and decrease the noise. This construction allows a greater muffler capacity and greater radiating surface, both of which are desirable.

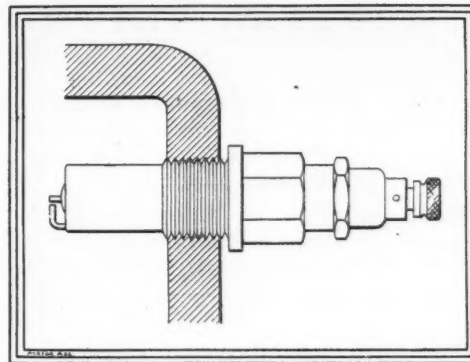
### BATTERY TESTING

Palo Alto, Cal.—Editor MOTOR AGE—What is necessary to comprise a full set of testing instruments for batteries and coils? How are these instruments used to give good results?—F. H. SMITH.

If it is desired to test the coil and batteries in a car, a volt meter and an ammeter are all that are necessary. If making a comparative test of various makes of batteries and coils other apparatus is necessary. A new dry battery should register at least 1½ volts. When the voltage drops to .68 volt the cell is of little use. The amperes will vary with the size of the cell, and as the ordinary coil re-



WIRING TWO-CYLINDER MOTOR



CUTTER FOR VALVE SEATS

quires but ½ ampere the ammeter is of little service. To test the coil connect the ammeter in series with the battery and coil. The reading should not be over ¾ ampere if the coil is properly made. This, with the voltage for which the coil is wound, should deliver a thick, reddish-purple spark. The thin, white sparks have but little heat value. The variation of the spring and contact adjustment will often produce a fat spark, from what seemed a poor coil. In adjusting the vibrator do not screw in as far as it will possibly go and still vibrate, but leave it at the point where there is a slightly rattling vibration and a minimum primary spark.

### USE OF MAGNETOS

Chicago—Editor MOTOR AGE—I own a gasoline runabout and use the ordinary dry batteries, which do not prove satisfactory; and wish to inquire if small dynamos are used to any extent? It would seem that a good dynamo should give a more uniform current than a set of dry batteries. Is there any objection to the use of a small dynamo for ignition purposes? New dry batteries give a very good spark, but soon run down, and on a long run are apt to give out just when they are needed the worst.—C. P. J.

Small dynamos and magneto-generators are in common use for ignition purposes, and are said to give very satisfactory results. It is necessary in some types to use some form of battery to start the motor with, after which the dynamo or magneto is switched on and the battery cut out.

### STEAM ENGINE HORSEPOWER

Syracuse, N. Y.—Editor MOTOR AGE—Will you inform me through the Readers' Clearing House what horsepower a double-cylinder steam engine of 2-inch bore and 3-inch stroke will develop.—A. D.

With a mean effective pressure of 120 pounds per square inch and cutting off at one-third stroke, such an engine should develop about 6½ horsepower at 600 revolutions per minute.

### HEATING OF MOTORS

Dayton, O.—Editor MOTOR AGE—Does a two-cycle motor running at the same speed use twice as much battery current as a four-cycle motor? Does not a two-cycle motor give off more heat than a four-cycle motor of the same size?—F. E. T.

A two-cycle motor will use twice as much battery current as a four-cycle motor, as twice as many sparks have to be produced during the same number of revolutions. The amount of heat developed by a two-cycle motor is not much greater than that given off by a four-cycle motor, as the charges are not so rich or under so high a degree of compression as those in a four-cycle motor. The impression to the contrary is general, however.

# AUTOMOBILE

The railway motor cycle shown in the illustration is an adaptation of a regular pedal driven railway quadricycle. It was motor equipped by the Merkel Mfg. Co., of Milwaukee, Wis., which attached an ordinary Merkel 2¼-horsepower bicycle motor to it. This was placed vertically on the rear frame so that a direct spur gear drive to the live rear axle might be had. The machine is started like a motor bicycle, there being a free-wheel pedal and chain drive. A band brake is a part of the large spur gear on the rear axle.

It is said that the machine has a speed range of from 4 to 28 miles an hour. The Merkel company believes this to be a desirable form of light motor railway inspection car.

## THOR COMPENSATING SPROCKET

Ever since the introduction of the motor bicycle there have been numerous attempts to rid the chain drive system of its "jerkiness" by the use of some sort of spring or other yielding sprocket. The Aurora Automatic Machinery Co., of Aurora, Ill., has recently produced a compensating sprocket to form a part of the well known Thor motor bicycle factors. It is of few parts and is said to be a practical medium for absorbing the motor shock, especially when running at low speed, when such shock is naturally more felt by the rider.

The Thor sprocket consists principally of three parts; two side plates and the sprocket rim. Between each plate and the sprocket rim are two square bronze rings rolled diagonally and fitted in grooves similarly shaped in the sprocket rim and side plates. The side plates are clamped together with bolts and nuts on the inside of the sprocket rim, and adjusted to suit the rider's requirements. If the rider desires a rigid drive, it requires but a moment to tighten up the nuts and secure the desired results.

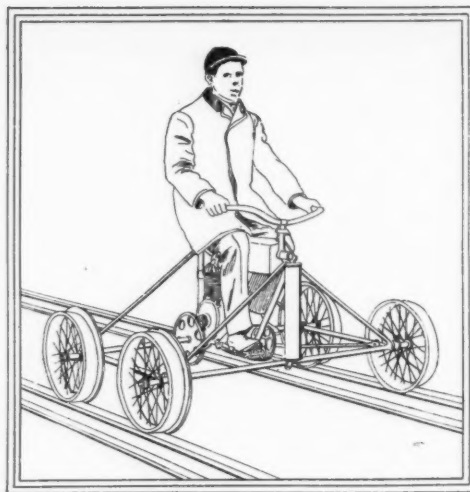
On account of its peculiar construction, the clamp has a contact surface of nearly 10 square inches on the bronze rings, and consequently the same amount on the sprocket and sides. Owing to the diagonal position of the contact members, the gripping strain is increased in proportion to the pulling of the chain; hence, it is not necessary to clamp the sprocket tightly. The diagonal construction centers the sprocket, and compensates for wear that may occur.

It is claimed that owing to the large contact surface and the slight pressure necessary, the sprocket, while absorbing the jerk of the motor, does not lose its adjustment; that it will prevent the breaking and undue straining of the chains, and allow the machine to be stopped quickly, on account of allowing the motor to slow down, and to stop gradually independently of the machine. This sprocket takes the place of the ordinary counter shaft sprocket of the regular Thor motor bicycle set, and without any changes in the other parts.

## ELECTRIC PASSENGER BREAKS

The Auto-Car Equipment Co., of Buffalo, N. Y., is executing an order for twenty-passenger electric breaks which are to handle intra-mural traffic at the world's fair at St. Louis, Mo.

These vehicles have a wheel base of 8 feet 10 inches, standard gauge track, and 36-inch artillery wood wheels, fitted with 4-inch solid rubber tires. The body platform is 12 feet long



MERKEL RAILWAY MOTOR CYCLE

and 4 feet wide, and the five seats running crosswise, are wide, roomy and provided with high backs and comfortable cushions. Each seat will accommodate four persons comfortably. The height of the floor of the vehicle from the ground is 36 inches.

The running gear is of the reachless type with platform springs, giving three-point suspension. Roller bearings are used throughout. The steering device is a wheel and pinion and sector gear, the wheel being 16 inches in diameter. Each car is fitted with two independent sets of brakes, the one a double-acting internal expanding brake, acting on drums of gear wheels, and the other an emergency brake, operating on the motors.

A double motor equipment is employed, each motor transmitting independently by means of a roller chain. The flexibility of the double chain drive adapts the machine to varying road conditions and street service.

The storage battery, which is contained in a single tray, consists of forty-two cells. The car is fitted with canopy tops, side curtains, electric lamps, etc.

This company is also manufacturing a line of delivery wagons and trucks with carrying capacity from 1,000 to 5,000 pounds. The 2-ton delivery wagon is fitted with a regular closed top, but any style of top can be used or the plain platform can be fitted as a stake wagon without varying the construction of the standard chassis.

# DEVELOPMENT

The Auto-Car Equipment Co., which incorporated the first of the present year, has found it necessary to expand and has secured about 10,000 square feet additional factory space, and now announce that it will turn out automobile bodies in tonneaus, runabouts and combination surreys, which will be furnished either in the white or painted and trimmed. The company also manufactures canopy tops, sliding gear transmissions, equalizing gears, running gears and other parts and supplies. E. B. Olmsted already known to the automobile trade, is the sales manager of this company, as well as secretary. He will push the parts end of the business vigorously as well as the regular line of omnibusses, breaks and commercial vehicles.

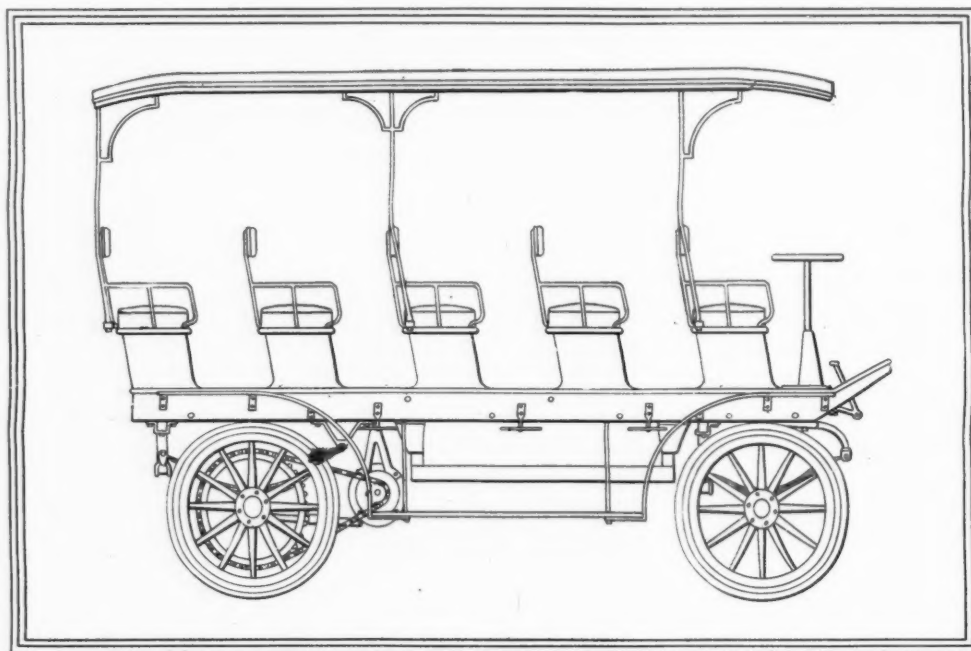
## BODY OF MAHOGANY

The latest automobile oddity in Louisville, Ky., is a touring car with mahogany body for C. C. Mengel, who imports African woods. About the time he placed his order for a Rambler last fall he received a lot of particularly fine mahogany from the Congo state, and forwarded sufficient for two bodies to the Jeffery company. The latter reports that on account of the hardness of the wood over 3 months were taken to work it into shape. The second body is being put on the car which will be sent to the St. Louis exposition.

## ENGLISH SHOW REVIEWED

Excellent and interesting as the recent exhibition in the Agricultural hall, London, was, it was disappointing in the actual number of cars, complete and in chassis form, says a writer in the Autocar, of London.

Last year's figures at the hall—443—came very near those of the palace—534—which shortly preceded it, while the hall exhibitors, both general 238 and car 122, actually exceeded the palace—189 and 115 respectively. The palace figures rose this year to 255 general and 122 car. The hall figures in the "all on" section reached the record of 284, while the car exhibitors were practically the same—116. If those who showed motor boats, six, and motor mowers, two, be added, they become 124, or, with those who only showed motor



TWENTY-PASSENGER BREAK FOR THE WORLD'S FAIR



cycles, eleven, 135, against 136 at the palace. Indeed, it is really a dead heat, as in one case two firms of manufacturers at the hall were represented by a single agent, so there was once more the singular fact of two shows having, in the motor section, the same number of exhibitors—136.

It was otherwise with automobiles, which fell away from complete cars, 362 to 285, and from a total of 443 to 382—a decline in numbers of, say, twenty-two per cent and fourteen per cent. The reason is not easy to see, save that the exhibitors were generally content with a smaller display.

A singular and regrettable feature at both shows was the absence of cars which derive their power of propulsion from alcohol. This is all the more extraordinary considering the efforts that are being made to promote the production of suitable alcohol in the kingdom, more especially in Ireland.

It will be seen that gasoline almost sweeps the board—90.998 per cent at the palace and 90.311 at the hall—but even these inclusive figures do not represent the entire case, as nearly all under the head of steam apply to lorries and the like. As a matter of fact, there were only five or six actual passenger cars in the hall—only just over 1 per cent. Electricity, too, seems on the decline—say, 3 per cent at both shows, or less than half the proportion it showed the previous year.

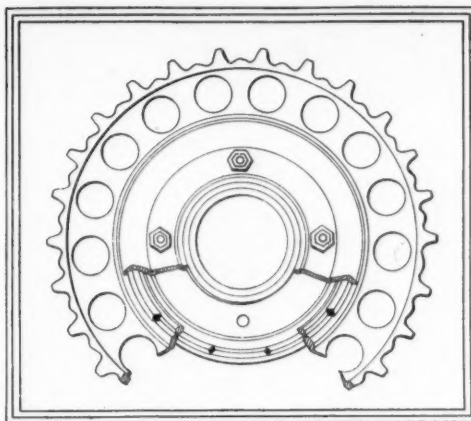
## DISTINCTIONS IN RADIATOR CONSTRUCTION

VISITORS to the Paris show last December reported that foreign makers were discarding the cellular cooler in favor of a new form of tube and disk radiator. This report was received with some apprehension among American manufacturers, many of whom had so prepared for the use of this style of cooler as to make a radical change impossible. Sentiment in America had been influenced by the attitude of foreign automobile builders, and it began to look as though the popularity of the honeycomb radiator might suffer. In fact, some of the leading manufacturers in the United States began at once to experiment with disk radiators.

A few American builders, however, who had used the Whitlock cooler during the latter part of 1903, having found that it gave satisfactory results, made no effort to change. Others soon began to appreciate that the foreign attitude on the question had been exaggerated. Whatever the Paris show may have indicated regarding the attitude of foreign builders, the New York show revealed the fact that nearly all of the leading American builders of touring cars, had adopted the Whitlock style of cooler for 1904.

It has also developed that the action abroad was due to certain well defined causes which do not exist here. In the first place, foreign cellular coolers are very expensive, necessarily so, because the small square or hexagonal tubes of which they are composed are much more expensive than the sheet copper used in the American style. Another element in the situation is the fact that the "nested tube" cellular cooler requires great skill in its manufacture, and even when most skillfully made, almost invariably gives trouble by leaking. The efficiency of this style of cooler, however, stands unimpeached, as does its beauty of design and general appearance.

The multiple cylinder car, with front verti-



THE THOR YIELDING SPROCKET

Only two forms of gear demand serious consideration—the chain drive and the propeller or cardan shaft, direct central transmission. The rise into favor of the latter is shown by the statistics. There is a marked difference between last and this year. At the palace 1903 show, chains claimed 55 per cent, shaft nearly 37 per cent, while at the hall 49 per cent and under 43 per cent represented the state of affairs. At this year's palace show the chain was in a very decided majority—56 per cent, shaft only 40 per cent. This year's hall show brought about a complete change, and for the first time—a notable date for his-

torians of the future—the shaft, 181 in numbers, and 47.382 per cent in proportion, beat the chain, 175 in numbers and 45.812 per cent in proportion, the two forming 93.194 per cent of all.

Low price was a feature of the show, but the exhibitors of cheap cars seemed chary of saying anything about them. To give but meager details, with the entire absence of prices, in the official catalogue was a very short-sighted policy on the part of the exhibitors.

In connection with steam cars, several used petroleum as fuel. Out of the twenty-two steam motors in the show, fourteen or fifteen were heavy vans or lorries burning coke, etc.; nearly all the remainder of the passenger cars used petroleum.

Included in the chain cars were many, mostly of the lighter description, with a central chain drive.

Aside from such consideration as improvement in design and especially in body structure probably the most notable change in tendency as marked by the show this year was the great increase in propeller shaft transmission above mentioned. It would seem, at least casually, that the live axle properly made, has proven itself reliable in all kinds of usage and that the motor construction were hence also a safe and efficient one. At any rate it is a popular one.

cal motor, has lost no popularity either abroad or at home, and wherever foreign makers have discarded the cellular cooler, they have filled its place in the front of the hood with a disk radiator made to look as much like a cellular cooler as possible.

As compared with the Mercedes type, the Whitlock is not, properly speaking, a cellular cooler at all. It is not open to the objection, often raised against the Mercedes, as the typical cellular cooler, that it proverbially leaks. On the contrary it gives remarkably little trouble on this account; no more than is experienced with the ordinary disk radiator. It is not composed of an aggregation of loose tubes merely held together at the edges by solder, as in the original cellular cooler, in which the constant twisting and vibration strains the tubes apart, causing leakage, even where the cooler is perfectly tight at the start. It consists of a series of corrugated sheets, extending in continuous lengths from the top to the bottom of the cooler. The effect of this continuity is strength, not rigidity; for the corrugations make the cooler flexible, so that the twisting, straining and vibration of the severest usage are not apt to loosen the joints or cause leaks.

Furthermore, the flexibility of the corrugations is a safeguard in cold weather. The Whitlock cooler is less likely to be frozen up than many tube and disk radiators, on account of its compact structure and the absence of a natural circulation of air, but it is also better fitted to withstand uninjured any accident of this kind. The past winter has developed scarcely a single case of serious injury to a Whitlock cooler by freezing; in fact, one case has come to our notice where a 25-horsepower cooler

has been in constant use all winter, having been frozen solid at three different times without injury or repair. This particular cooler, although in constant use since last June, has never given a moment's trouble on any account.

The saving in weight effected by its use is a strong point in favor of this type of cooler. Two actual cases will suffice to illustrate.

In the first, the original cooling system comprised a radiator and a 6-gallon tank of water, together aggregating over 85 pounds. This was replaced by a Whitlock cooler weighing 28 pounds and carrying a little over 2 gallons of water, so that the total weight is now under 50 pounds—a saving of about 42 per cent.

In the second case, the original system, including a disk radiator of special design and a 15-gallon tank of water, weighed over 250 pounds. In place of this was substituted a Whitlock cooler, weighing 70 pounds, and carrying 4 gallons of water, giving a total weight of a little more than 100 pounds—a saving of 69 per cent of the weight of the original cooling system.

The fact that there is little or no evaporation in this type of cooler absolutely prevents the deposit of lime—a bugbear without foundation in the minds of some. It also prevents the necessity and annoyance of frequent filling. To be able to run 1,000 miles without a thought of the cooling system is certainly no small advantage.

It also offers no resistance to the flow of water, thus relieving the pump from pressure and taking this load off of the engine; while at the same time allowing rapid circulation of water, which is fundamental to efficient cooling. In addition to this the water piping is simplified and the system as a whole takes up less room, on account of the omission of an extra tank and the necessary piping which goes with it.

EDITOR'S NOTE—This article is by Joseph E. Lewis, of the Whitlock Coil Pipe Co. Its purpose is to explain from the maker's standpoint the difference between the Whitlock and that style of radiator commonly known as "cellular."

# FROM THE



# FOUR WINDS

Henry Chapman has opened an automobile repair shop in Marengo, Ill.

\*\*\*

Some capitalists intend organizing an automobile line in Auburn, Cal. Buses seating sixteen passengers are intended for the service.

\*\*\*

The highway board of the Island of Manx, England, has decided that a fine of \$100 will be inflicted for every person or animal found upon the course during the English eliminating race.

\*\*\*

Dr. E. D. Stillman, of West Acton, Mass., is establishing an automobile service between Worcester and Paxton, Mass. Headquarters will be located in Haverhill. Steam cars seating twelve passengers will be used in the service.

\*\*\*

At the recent election of officers for the Richmond Automobile Club, Richmond, Ind., Professor R. L. Sackett, of Earlham College, was named president; O. E. Fulghum vice-president; A. J. Spekenhier, secretary. The club has decided to join the American Motor Association.

\*\*\*

The following officers were named at the annual election of the Bloomington Automobile Club, Bloomington, Ill.: S. P. Irvin, president; J. A. Beck, vice president; Henry Thobro, secretary; Charles Dietz, treasurer; W. K. Bracken, William Courey, C. W. Stevens, Walter Johnson, E. N. Martens, directors; Jeff Crawford, road captain.

\*\*\*

Banker Bros., of Pittsburg, Pa., are contemplating the addition of a new department to their extensive business in the east end, to build the bodies of automobiles themselves. They propose to buy the chassis from factories and build the bodies to the order of their customers. The step has been practically decided upon and was caused by the delays that the firm has suffered this year because it could not get bodies in time.

\*\*\*

The grand stand for the German Automobile Club at the starting point in Saarburg will have accommodations for 3,000 persons. The entire stand will be divided into boxes, each seating six persons. The charge per seat will be \$12.50. Smaller stands will be erected between Saarburg and Homburg where seats will cost from \$1.50 upwards. When all the stands are finished it is figured that they will be able to hold over 20,000 spectators.

\*\*\*

A trip that will test a two-cycle motor severely is now being planned by Percy F. Megargel and William S. Harrison, the two Rochester, N. Y., newspaper men who recently held an automobile show in that city, accompanied by Ralph G. Megargel, of the Scranton Automobile Club. An Elmore 1904 tonneau car will be used and the start will be made from New York city on or about May 10. The Megargel brothers have long used a two-cycle motor on their launch and advocate

its use in automobile construction, claiming that it possesses twice the hill climbing propensities of a four-cycle engine. The Elmore car attracted their attention at the Rochester show and they have closed negotiations for such a car through Arthur McNall, the Rochester agent, arranging to have the car shipped directly to New York, where the 3,000 mile trip will be commenced.

\*\*\*

In a recent case before a Belgian court, the judge stated that he did not see how he could sentence a man accused of having caused an automobile accident when he did not drive his car but loaned it to a friend. The judge said it was a poor law and still poorer justice to hold the owner of a motor car responsible for an accident in which he had no part.

\*\*\*

An important decision has been rendered by the commissioner of patents to the effect that a design cannot be made the subject of a second patent merely because it has been put to a new use, since the question of use does not enter into consideration in designs. They relate solely to the matter of appearance.

\*\*\*

According to official announcement Baron Pierre de Crawhez, the Belgian gentleman driver, will run a Hotchkiss car in the French eliminating race and a Pipe car in the Belgium trial event. A Paris paper wants to know what will happen should he qualify both in France and in Belgium.

\*\*\*

A fire in the store of the Powell Automobile Co., of Omaha, Neb., last Sunday resulted in the complete destruction of four motor cars valued at about \$5,000. Prompt action on the part of the firemen prevented the spreading of the blaze and about a dozen cars were saved.

\*\*\*

A French paper recently published a letter from a physician who claimed that it was Rigolly's high quality of brain more than the quality of the car which enabled him to run the car at a speed of 95 miles an hour.

\*\*\*

According to an English trade paper there are only 1,670 motor cars in use in Italy. Of this number 350 are to be found in the province of Turin; 239 in the province of Milan and 169 in the province of Florence.

\*\*\*

A rural mail carrier recently was treated with a ride by a motorist of Germantown, O. The mail road, which is about 25 miles long, was covered in 2 hours, during which time 192 stops were made.

\*\*\*

The first club run of this season by the Automobile Club of Pittsburg, Pittsburg, Pa., has been set for May 7. The run will be through the parks and over the principal boulevards.

\*\*\*

The city administration of Scranton, Pa., is in need of money and an anti-automobilist suggested at once a tax on automobiles.

\*\*\*

Local motorists in Denver, Col., are planning an amateur automobile race meeting to be held Decoration day at Overland park.

Automobiles may not be driven faster than 8 miles an hour in Norristown, Pa.

\*\*\*

The mayor and the chief of police of Pasadena, Cal., are much in favor of getting an electric patrol wagon for the police department.

\*\*\*

An automobile factory may be erected in Port Huron, Mich., this summer if eastern capitalists who have been visiting the town agree with the city authorities upon certain conditions.

\*\*\*

The St. Paul Motor Club, St. Paul, Minn., is arranging an endurance run over a distance of about 140 miles. The test will be held sometime in June. A hill-climbing contest is also being arranged, to be held possibly before Decoration day.

\*\*\*

At the end of last January the Scottish Automobile Club had 323 members. At the meeting of the Automobile Club of Antwerp, Belgium, held during the latter part of last month, it was announced that the members of the club numbered 115, an increase of nearly 50 per cent within one year.

\*\*\*

The Utah Automobile Co., Salt Lake City, Utah, held its opening last Thursday, Friday and Saturday. Sixteen different styles of automobiles were displayed. The company handles the Olds, Peerless, Winton, Cadillac, Orient buckboard and Cleveland. The visitors, who were numerous, were entertained by music both afternoon and evenings.

\*\*\*

The new store and garage of the Pence Automobile Co., of Minneapolis, Minn., is ready for occupancy and will be opened Saturday of this week. This is a four-story and basement building, 30 by 150 feet and is one of the finest establishments in the west. Aside from handling seven different makes of cars the Pence company is northwestern distributing agents for a line of appurtenances and sundries.

\*\*\*

The Michigan Motor Co., of Grand Rapids, Mich., has been organized. No articles of incorporation have been filed and the concern will probably not incorporate. Automobile engines and motors for launches will be manufactured by the new company, which is located at 246 South Front street. Harry, Frederick and Charles Perkins are the members of the concern, and the last named will be the manager.

\*\*\*

The Ladies' Automobile Club of Great Britain and Ireland now has a membership of 267. At a recent meeting of the officers it was decided to have a uniform subscription and entrance fee for town and country members. The subscription fee will be \$25 and the entrance fee \$15. The club's committee has arranged an excursion to Homburg at the time of the international race and about a dozen members have already decided to go on the run.



At a recent meeting of the board of safety of Dayton, O., a resolution was adopted urging the council to pass an ordinance making the carrying of a number on the rear of automobiles compulsory.

❖ ❖

The record-breaking Gobron-Brillie car which was so prominent at the Nice meeting will not be used in the French eliminating race. Special 100-horsepower cars are now being finished and it is claimed by some who saw their motors that they will even be able to run faster than Rigolly's Nice monster.

❖ ❖

Between Lecco and Introbbio, Italy, an automobile bus service has been organized. The distance is 64 miles and traverses roads with 7 to 12 per cent grades. The average speed of the buses is 8 miles per hour. There are two in use, being made by the Union Co., of Nuremberg, Germany. One is provided with a 12-horsepower single cylinder motor.

❖ ❖

Dr. C. T. Clifford, of Lowell, Mass., says that he intends to accompany C. J. Glidden on the first 3,000 miles of the latter's trans-continental tour this summer. He will use his single-cylinder Knox, which has already been in use 2 years and, while he does not expect to match scorching "stunts" by Mr. Glidden, he anticipates plugging along to be on hand at the finish each day. The tourists will start from Liverpool about the middle of May.

❖ ❖

If the plans of the chief of the fire department of Evanston, Ill., are approved by the special fire committee of the Chicago suburb, it may only be a question of a few weeks before the fire department will have an automobile hose wagon and chemical engine combined. Such a vehicle will cost \$4,000 and if it should give the expected results the horsedrawn fire engines now being used will be replaced with automobile fire fighting engines. Chief Mersch of the fire department said it would be a great improvement and result in much economy.

❖ ❖

The anti-skid or non-slip tests arranged by the Automobile Club of Great Britain and Ireland started Monday, April 18, when eleven different devices were tested over a road about 145 miles long. The weather was fine; in fact, it was the reverse of what was desired for this kind of a test. The competition was for a week, and every day the run was made over a different road and over varying distances. The Automobile Club of Great Britain and Ireland named a committee of experts to follow these tests and they will draw up a detailed report at the conclusion of the event. It is the first English experiment on a large scale with non-skidding devices and results are awaited with interest by the makers and owners of automobiles at home and abroad. The total distance for all the tests is nearly 850 miles.

At the spring election held in Outagamie county, Wis., last week, the voters, principally farmers, adopted a referendum regulating the running of automobiles on the public highways. All automobiles must come to a full stop when signaled to do so by the driver of any conveyance which may be met, and shall remain at rest until such conveyance shall have passed. The driver of any automobile wishing to pass a conveyance on the road shall properly signal the driver of such conveyance he may desire to pass. No automobile shall be driven faster than 12 miles an hour, and when crossing a highway and passing over the crest of a hill the cars must not be driven faster than 4 miles an hour.

❖ ❖

The Automobile Club of Pittsburg, Pa., will hold its first event Sunday, May 8. A procession of the 200 club members will assemble at the Hotel Schenley in the morning and take a half day spin around the city boulevards. The bad weather of the past 6 weeks has prevented any general event and kept many from going out at all. If the weather is favorable Sunday most of the club members and many private motorists will be out to begin the season's sports. As soon as possible the club will arrange for a series of races which will be held probably on Brunots island, where the races of last year were so uniformly successful.

❖ ❖

John Hanson's automobile repair shop in the Park building, Evanston, Ill., has been purchased by T. S. Ellithorp and M. W. Burt. New quarters were taken up at 1834 Maple street and the name of Evanston Auto Co. given the concern.

❖ ❖

An automobile race is being planned for Decoration day from Salt Lake City to Farmington, Utah, a distance of about 20 miles. The Salt Lake clubmen are promoting it.

❖ ❖

The postmaster of St. Louis, Mo., intends to have the postoffice department use an automobile for the collection of mail and packages on the fair grounds.

❖ ❖

By a recent typographical error E. F. Phelps, manager of the New York office of the Phelps Motor Vehicle Co., was made to assume the initials E. J.

❖ ❖

Gregory & Co., who have been engaged in the bicycle and automobile business in Fresno, Cal., for several years, have sold out to Waterman Bros.

❖ ❖

The Gobron-Brillie car with which Rigolly cleaned up the entire program at the recent races at Nice, France, was fitted with Michelin tires.

❖ ❖

An automobile salesroom has been opened recently by Hubbard Nussel in the Cummings building, Central street, Chippewa Falls, Wis.

At the annual meeting of the Fremont Automobile Club, Fremont, Neb., the following officers were elected: D. V. Stephens, president; Rudolph Schurman, secretary-treasurer; Ross L. Hammond, F. E. Janes and Rex Henry members of the board of control.

❖ ❖

At a meeting of the board of governors of the Automobile Club of Buffalo, N. Y., Edward H. Butler was appointed delegate of the club at the James Gordon Bennett race. Mr. Butler will also be asked to see the officials of the Automobile Club of France and of the Touring Club of France concerning the question of interchanging favors.

❖ ❖

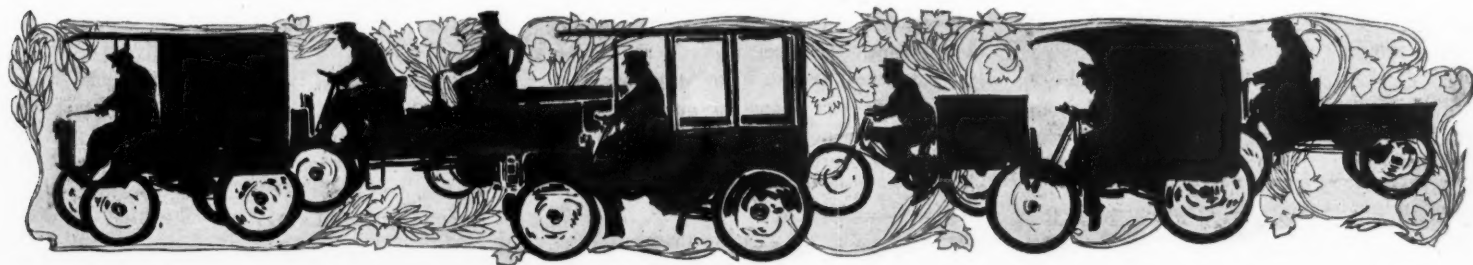
I. F. Davis, trustee in bankruptcy of the Holley Motor Co., of Bradford, Pa., will sell at public auction at Bradford, May 10, all of the book accounts, manufacturing material and partially finished products of the company. A meeting of the creditors of the Holley company will be held May 16 to consider a proposed sale of the real estate and machinery. This is encumbered by a mortgage and the trustee wishes authority to sell and consequently free the estate of the incumbrance.

❖ ❖

The Binghamton Automobile Club, of Binghamton, N. Y., was organized April 29, and the following officers were elected to serve until the first annual meeting is called: Willis Sharpe Kilmer, president; John M. Davidge, vice-president; Dean Albert Smith, secretary and treasurer. The club was organized under the rules of the state association and will affiliate with that association and the national organization after the merger of the A. M. L. and the A. A. A. has been effected. Ninety charter members formed the club and it is expected that within a short time fifty new members will have been added. One of the first steps of the new club will be to send a delegation to the officials in New York having charge of the St. Louis caravan to try to induce them to have the latter pass through Binghamton.

❖ ❖

Regulations concerning the running of automobiles in Omaha, Neb., were discussed and adopted last week at a meeting between the members of the city council, three automobile dealers and three motorists. It was agreed upon that the speed in the city would be 8 miles and in the suburbs a maximum of 12 miles is permitted. Motor vehicles must be licensed and numbered. The figures must be 5 inches high and every car must be provided with one or more white lights in front and one or more red lights in the rear. Every machine must also be provided with a bell, gong or horn, which must be sounded when crossing a road. A powerful brake is required and cars must be able to stop within 10 feet when going at 8 miles per hour. The former ordinance limited the speed to 6 miles per hour and also made it necessary to deposit a bond of \$100 with the city authorities.



# CURRENT MISCELLANY

## MOTOR CARS AS FREIGHT

The National Association of Automobile Manufacturers is preparing to approach the official classification committee in an endeavor to secure a modification of the present freight rates on automobiles. To show the importance of this contemplated campaign for more equitable rates the association has prepared the interesting following data:

The number of automobiles to be made in 1904 will be about 25,000. A very conservative estimate is 20,000. These, if shipped in carloads, would fill 5,500 cars. If handled one way only they would be charged at the present minimum rate—10,000 pounds per carload—as 55,000,000 pounds.

Not more than one-half will be shipped in carload lots. One-half or 10,000 automobiles would fill 2,750 cars. The remainder would be shipped, say, averaging two to a car, or in 5,000 cars. This makes a total of one-way shipments of 7,750 carloads.

About 50 per cent will, at some part of the season, be shipped from point to point by tourists, in every case being charged at the minimum of 6,000 pounds; or in all 60,000,000 pounds—the equivalent of 6,000 carloads.

The automobiles in use, beside the 1904 product, number at least 30,000. They have paid freight proportionate to the above, and this year will be shipped by their owners, from place to place, to the extent of at least an additional 60,000,000 pounds.

It appears, therefore, that the railroads will handle this year the equivalent of 197,500,000 pounds; or, 98,750 tons which equals, at the present minimum rate of 10,000 pounds, 19,750 carloads. This is equal to 581 freight trains of ordinary length or to one train 149 miles 1,093 yards long.

## MOTORS IN TELEGRAPH SERVICE

Experiments with motor cycles were made April 17 near Vienna under the direction of the Austrian Automobile Club and the war ministry. The scheme was that both the railway and telegraph service was out of order and messages had to be urgently delivered at a point 186 miles distant from Vienna. The test was made by relays, each motorist covering about 50 miles. One message was delivered in 8 hours 29 minutes, while another, sent over a different route, required 9 hours 33 minutes to reach its destination. The military authorities were well satisfied with the experiment, which will soon be renewed on a larger scale. Archduke Leopold Salvador followed one of the tests from start to finish.

## EMMANUEL A MOTORIST

Italian motorists are jubilant at the new evidence given by King Victor Emmanuel of his liking for automobiles. The Automobile Club of Italy, with headquarters in Milan, having recently named the king honorary president, advised him of its intention to present him with a special insignia, and that it would make a run to Rome in motor cars.

The king informed the club that he would be glad to receive the distinction and would meet the club himself somewhere on the road. Twelve members were delegated and begun the journey to Rome. All along the road other motorists joined the party, which soon took the proportion of a small army. The mem-

bers of the Automobile Club of Rome started to meet the visitors, who were met several hours out from Rome by the king and his officers and other members of the royal party. Emmanuel got out of his car and greeted each of the visiting delegates, inspecting their cars and asking many questions relating to the run.

## NO MACHINE FOR FIRE CHIEF

During the last week of the old council, Milwaukee, Wis., various committees recommended postponement of many measures which were pets of certain aldermen, but which later were abandoned. One of these was a resolution introduced in the council in 1900 by George H. Chase, providing for the purchase of an automobile for the chief of the fire department and one for the first assistant chief. By the action of the old council the measures are now likely to die a quiet death.

## EXPORTS ON THE INCREASE

The latest compilations of the department of commerce and labor show that the exports of automobiles and parts thereof continue to increase steadily. In March a year ago the exports were valued at \$93,618, increasing to \$164,406 in March of this year. During the 9 months ending March, 1904, the exports were valued at \$1,305,777, as against \$759,841 for the same period of 1903 and \$517,532 for the 9 months of 1902. The progress the automobile manufacturers are making in the foreign field is very substantial and reflects great credit on the industry.

## MOTOR CYCLES TOO FAST

Since the enforcement of the speed regulations in Syracuse, N. Y., other municipalities throughout central New York have taken similar steps. Chief of Police Barnes, of Cortland, has purchased a stop watch, so that he can time drivers. At Oneida a number of motor cycles speeding on the pavement in Main street just about the time people were on their way home from church caused complaints regarding the violation of the highway ordinances without interference from the municipal officers.

## BUFFALO PLANTS BUSY

The Sterling Engine Co., of Buffalo, N. Y., now occupies the old Niagara Motor Vehicle Co.'s plant at 121 Grant street, and is making automobile boats and two-cycle marine engines in single, double and triple cylinder sizes. This plant is particularly busy and has all the orders it can possibly attend to.

The Queen City Automobile Exchange Co. is no more, having gone out of existence with the conclusion of last month. Some of its officers, however, immediately incorporated a new company under the style of the Queen City Garage Co., with J. H. Betts president and treasurer, M. Fischer vice president, F. C. Rupp secretary. This company takes over the agency for the Knox and Orient buckboard and will conduct an extensive garage, as did the old concern. Its location will be at the old cyclorama building on Edward street.

Mr. Beck has opened a garage at 77 Edward street, which was the location of the old Queen City Automobile Exchange Co., and is advertising dead storage at \$5 per month and storage, washing and polishing at \$10 per month, much under existing prices.

## NEW CATALOGUES

"Rigs that Run," in one and three-cylinder patterns, are shown in the booklet just issued by the St. Louis Motor Carriage Co., of St. Louis, Mo. The explanation of the construction of the different models is comprehensive.

The Garvin Machine Co., of New York, has issued a new catalogue of metal working machine tools. It contains much practical shop information.

A forty-page booklet, descriptive of both the gasoline and electric patterns of the Columbia, has just been issued by the Electric Vehicle Co., of Hartford, Conn. It is exhaustively illustrated.

The Stevens-Duryea is fully described in the new catalogue of the J. Stevens Arms and Tool Co., of Chicopee Falls, Mass. The booklet is free from bombastic ad writing and is a good example of conscientious catalogue making.

A catalogue in novel form has been issued by the Automobile Equipment Co., of Detroit, Mich., to exploit the automobile apurtenances which the company manufactures and jobs. It is both original and extensive in the presentation of a large line of goods.

One of the newest parts and apurtenances catalogues is that of the Excelsior Supply Co., of Chicago. It lists an extensive line of both special and standard articles.

The Cadillac catalogues, issued by the Cadillac Automobile Co., of Detroit, Mich., is one of those ever welcome plain booklets in which high grade mechanical half-tones, good printing and careful description have been used instead of much ornamentation to give character to the production.

## FOURNIER WILL NOT RACE

In a notice sent to Paris trade journals the concern with which Henry Fournier is connected announced that the latter would not take part in the French eliminating race, nor in any other race. Fournier says that it is not possible to attend carefully to business and racing at the same time, and having won his share of important races he hopes there will be plenty of his countrymen to keep up the fame of France as a nation having the best drivers. A. Amblard will take Henry Fournier's place as the third driver of the Hotchkiss cars in the French trial race. A. Clement, son of the manufacturer, and Cuders were selected besides Henriot to drive the Clement-Bayard cars.

## MOTOR BOATS IN BRAZIL

American vapor and kerosene launches are rapidly winning favor in Para, Brazil. An order for ten small launches has recently been forwarded to a prominent American manufacturer. The kerosene motor has the call in Para, though both are in demand. This is because the price of kerosene is considerably under that of gasoline.

## BUS LINE IN CHINA

Advices from Niuwang, China, say that there is an automobile line ready to start four machines to operate between the old town and the administration city. Each vehicle will carry ten persons. The machines are now on the ground and will carry passengers for 10 cents each way.





16-18 H. P., 4-Cylinder Decauville.

# That Decauville Car

Has many exclusive and original features.

The steel pan, which supports and protects the entire mechanism from mud, water and dust, makes the Decauville the most desirable car on the market for American roads.

The Decauville rear axle construction combines all the advantages of the fixed axle and the live axle, and avoids their disadvantages.

The Decauville rear wheels run on a heavy, fixed rear axle.

Decauville reliability is unquestionable.

A Decauville ran 1,000 miles without a stop in 1901. That's an old story with us.

Edinburgh to London, over 400 miles, without a single stop is another official record.

Note the Decauville form of guarantee. Decauville quality makes this possible.

Send for further particulars about "That Decauville Car."

STANDARD AUTOMOBILE CO. OF N. Y.,  
Sole American Agent  
136 West 38th Street, New York

*Licensed Importers Under Selden Patent*

## AGENTS:

Philadelphia: H. S. Lane Motor Car Co.  
242 N. Broad St.

Boston: The Lewis & Matthews Co.  
66-70 Stanhope Street

New Jersey: Burtt & Co.,  
346 Halsey Street, Newark

*We will appoint desirable agents in unoccupied territory.*



**I**'stands for  
**In-com'pa-ble,**  
excellent beyond  
comparison; unap-  
proachable in kind,  
character or degree;  
matchless in design  
and workmanship.



There are automo-  
biles and automobiles,  
but the *White* is  
*incomparable*, and  
you don't have to wait  
to get up steam.  
100 Miles on one  
filling of tanks.  
Weight, 1600 lbs.



# TWO NEW AUTOMOBILE TIRES

---

*The  
Instantaneously  
Detachable*  
**DUNLOP**

AND

*The*  
**HARTFORD  
CLINCHER**

Introducing an entirely new departure in rim construction. ∴ Its detachable side flanges or beads are removed by the simple loosening of a screw, leaving a flat faced rim, from which the tire can be removed "like slipping a belt off a pulley"—a loose belt at that,

made under the G & J patents. This tire combines all the excellent qualities of that construction with many improved features of its own, hitherto characteristic only of **the foreign** makes

---

**THE HARTFORD RUBBER WORKS CO.**

**HARTFORD,**

**CONNECTICUT**

BOSTON NEW YORK PHILADELPHIA BUFFALO CLEVELAND DETROIT CHICAGO MINNEAPOLIS DENVER SAN FRANCISCO



## A Question of Dollars

A dollar's worth for a dollar.

That accounts for our immense business.

Save at the buying end of your business by getting a good round dollar's worth of value in tubing. —

Just now we are ready to quote prices on Standard Seamless tubing that'll prove of profit to those in immediate need — it would even be wise to anticipate your future requirements. —

We'll gladly quote, but you must make the request.



**THE STANDARD WELDING  
COMPANY, CLEVELAND.**



WE FURNISH THE AUTOMOBILE MANUFACTURERS WITH COMPLETE FRONT AND REAR

# Ball Bearing Axles

THAT ARE WELL KNOWN FOR WORKMANSHIP, DURABILITY AND EFFICIENCY

THE AMERICAN BALL BEARING CO.,      =      =      =      Cleveland, Ohio



# Mercedes Panhard

18-28 H. P.

15 H. P.

A limited number of the first 1904 Mercedes and Panhards ready for delivery in New York

## DURING MAY

No ? about deliveries. Which would you rather do? buy a promise for 99 cts. or buy the goods for \$1.00? Spring will suggest to more than one who has trusted that "A bird in the hand, etc., etc."

# Smith & Mabley

Incorporated

38th Street and Seventh Avenue, New York.

## The Standard of Value in Automobiles

IS THE PRICE OF A

# Rambler

### Model "E" \$650

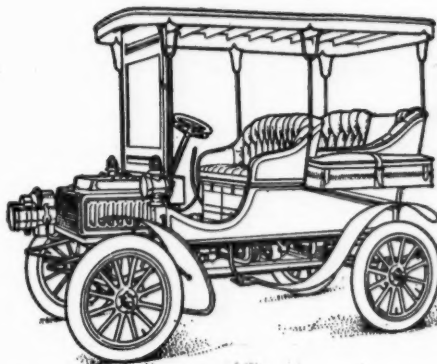
Single cylinder, lever steering

### Model "G" \$750

Single cylinder, wheel steering,  
81 inch wheel base

### Model "H" \$850

Single cylinder, with tonneau,  
81 inch wheel base



### Model "J" \$1100

Double opposed cylinders, 16 horse  
power, 84 inch wheel base

### Model "K" \$1200

Double opposed cylinders, with ton-  
neau, 16 horse power, 84 inch  
wheel base

### Model "L" \$1350

Double cylinder tonneau, complete  
with canopy top and side cur-  
tains, lamps and baskets

If you pay any more, you cannot get your money's worth  
If you pay any less, you don't get satisfaction

## THOMAS B. JEFFERY & CO., Kenosha, Wis.

Boston: 145 Columbus Avenue

— BRANCH HOUSES —

Chicago: 304 Wabash Avenue

## CLASSIFICATION ... WHY? DISTINCTIVE

THE LIGHTEST  
THE STRONGEST  
MOST DURABLE  
MOST EFFICIENT  
BEST FINISHED



ABSOLUTELY SAFE  
PERFECTLY CLEAN  
BEST TO RIDE  
MOST ECONOMICAL  
TO KEEP

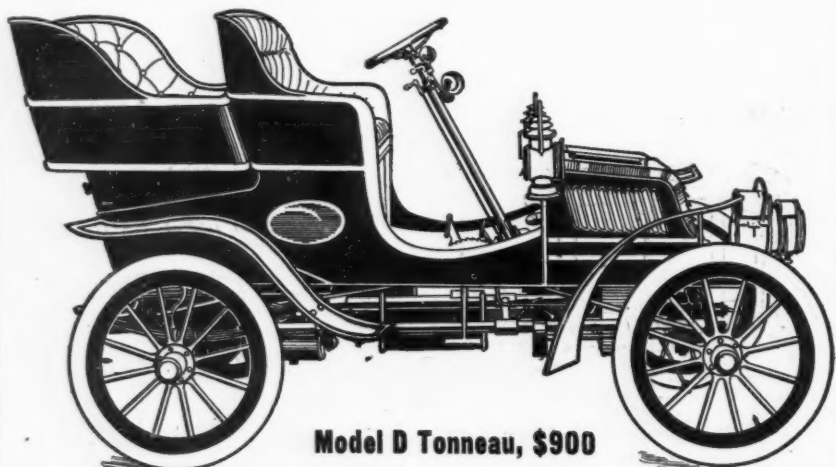
## THE BAKER ELECTRIC

Attractive in Rich Finish and Design. ✱ Simply Manipulated. ✱ Always Satisfactory.  
A Carriage Any Lady Can Drive.

SEND FOR OUR B K CATALOG.

THE BAKER MOTOR VEHICLE CO., Cleveland, Ohio

## Three Factories in Three Months Means "Early and Prompt Deliveries"



Model D Tonneau, \$900

*Air Cooled  
Shaft Drive  
No Vibration  
Eight Actual Horsepower  
Speed 2 to 30 Miles  
Simplicity  
Durability  
Design*

*A car which stands on its own merits, and one that will go anywhere that the big fellows will go. Fourteen per cent grades on high speed.*

ON OCTOBER 1, 1903, we moved into our new "1000 Crest Factory." At the expiration of the New York show we were so completely swamped with orders that we started night work, also an ENORMOUS addition to our factory, increasing our original capacity from 1000 to "1500 Crestmobiles." This we thought sufficient. But the fates decreed otherwise. "CREST SUCCESS" is universally recognized, and Crest agents continue to send duplicate orders. As a result of which we have just completed our third addition, making the Crest factory one of the largest in the world. For the BUYER we have the simplest car made. For the AGENT a car that will sell from January 1 to December 31.

## CREST MFG. CO., Cambridge, Mass.

Member of the Association of Licensed Automobile Manufacturers

WRITE FOR NEW CATALOG.



# Columbia

## Touring Car

30-35 Horse Power



Most powerful car of its weight and presents the maximum of efficiency, speed, reliability and usefulness. No other car equals it for smoothness and quietude in running or for amount of power developed with the engine at low speed. All working parts enclosed but quickly accessible.

Fitted with Tonneau, Limousine or Surrey Bodies of the most approved design and finish.

PRICE, with  
Standard Tonneau Body . . . **\$4000**

12-14 H. P. Light Gasoline Tonneau . . . . \$1750

24-30 H. P. Touring Car (Chicago-New York record) 3500

New Model Light Electric Runabout . . . . 850

"Elberon" Electric Victoria (with latest improvements) 1600

Catalogue sent on request; also special catalogues of Electric Town Carriages and Commercial Vehicles

**ELECTRIC VEHICLE COMPANY, Hartford, Conn.**

NEW YORK, 134, 136, 138 W. 39th St.

CHICAGO, 1413 Michigan Avenue

BOSTON, 74, 76, 78 Stanhope St.

Members of the Association of Licensed Automobile Manufacturers.

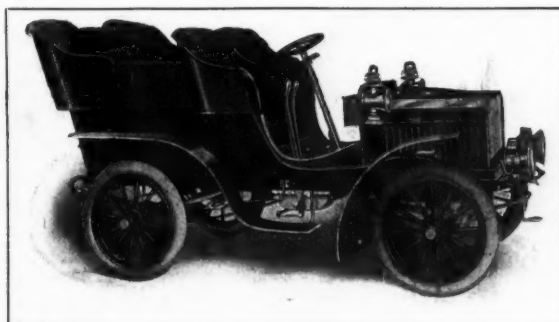
**TWENTY  
HORSEPOWER**

**THE**

**PRICE  
\$2,000.00**

# DUMONT

THE MOST POWERFUL FOUR-  
CYLINDER AIR-COOLED CAR  
EVER BUILT. :: :: :: ::



AND WE GUARANTEE IT TO  
KEEP COOL UNDER THE MOST  
SEVERE TESTS. :: :: :: ::

WRITE US AND WE WILL TELL YOU MORE ABOUT IT.

BUILT BY THE

## Columbus Motor Vehicle Co.

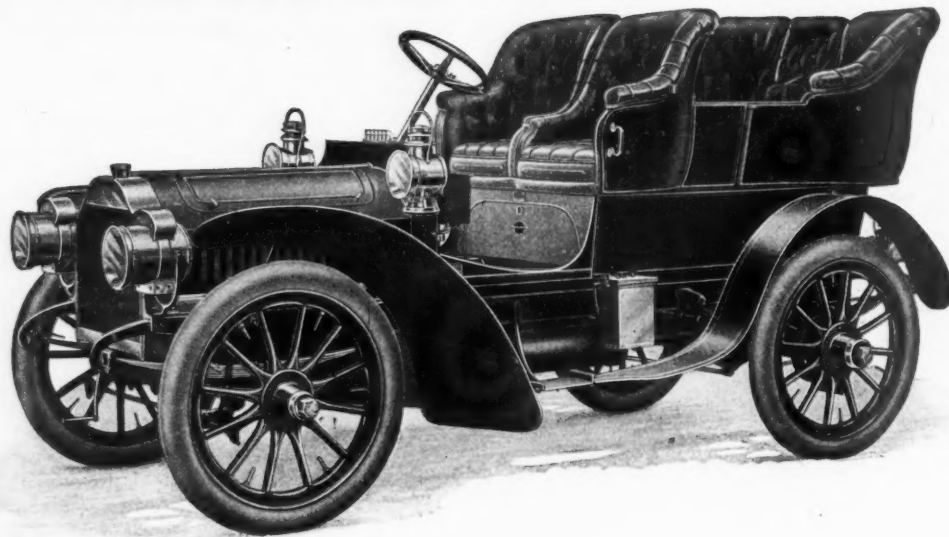
**WEIGHT  
1,800**

**COLUMBUS, OHIO.**

**AGENTS WANTED.**

**FOUR  
SPEEDS**

# We Can Make Immediate Deliveries



THE PEERLESS MOTOR CAR CO., Cleveland, Ohio.  
WRITE FOR CATALOG.

# The ROYAL TOURIST IS FOREIGN

to the Drawbacks prevalent in so  
many Motor Cars.



Model "O," 16-18 h. p. Model "K," 32-35 h. p. Aluminum Bodies—Canopy Tops—Side Door Limousine Bodies. \$2,300 to \$4,000  
It has **STYLE, SPEED, RELIABILITY** and **ECONOMY IN RUNNING.**

**The Royal Motor Car Co., - Cleveland, Ohio**

The Duerr-Ward Co., Distributors for N. Y. and vicinity. Illinois Motor Car Co., Distributors for Chicago and vicinity



Zip! went the spark, on flew the Knox,  
were never folks so glad.



THERE  
ARE TWO  
CLASSES  
OF  
AIR COOLING  
SYSTEMS  
FOR  
AUTOMOBILE  
CAR  
CYLINDERS

**K  
N  
O  
X**

AND OTHERS

What others TRY to do, the Knox DOES. That's the practical difference. Some keep cool PART of the time. The Knox keeps cool ALL of the time. And it does it AUTOMATICALLY! No wonder the Knox is known as

**"The Car That Obviates the Tow."**

NOTE.—The Knox Patent system of automatic air cooling consists of corrugated pins on the exterior of the cylinder in connection with an air blast produced by a fan. The corrugated pins surrounding the cylinder are two inches in length, and are screwed into the surface of each cylinder. They radiate the heat and make it possible to obtain 32 square inches of heat-radiating surface per square inch of outside surface of cylinder. This is about four and one-half times the amount obtainable with the ordinary type of air-cooled cylinder with cast flanges. The speed of the fan is in proportion to the speed of the engine; hence the cooling effect is practically in the same ratio as the work being done.

**Knox Waterless Gasoline Engines Do Not Over-heat in Summer**

It goes the route, because it has the mechanism that keeps going 365 days in the year and one day of grace every fourth year, under all road and climatic conditions. Suppose you look up the Knox or send for fully illustrated handsome catalogue of pertinent pointers. It's worth while.

Selling Agencies in all principal cities.

**Knox Automobile Company**

Members of Association of Licensed Automobile Manufacturers

Springfield, Mass.

## FREDERIC STEARNS

**Yacht, Automobile  
and  
Gas Engine Broker**

**373 to 375 Broadway  
NEW YORK**

TELEPHONE FRANKLIN 4165

### OFFERS FOR SALE A LARGE LIST OF AUTOMOBILES, AUTOBOATS AND MOTORS

Following are a few bargains taken  
from my May list:

#### AUTOMOBILES

**Oldsmobile runabout**—1903 model, has been varnished and given a thorough overhauling. Will guarantee it to be in perfect running condition. Price **\$300**, or offer to a quick purchaser.

**Orient 1904 buckboard**, will make a very low price to a quick buyer, it has never been used and I will guarantee it to be in running condition for one year.

**Haines-Apperson touring car**, 1903 model, with canopy top, glass front and lights. As it is in very good condition I will guarantee it for one year. First offer take it.

**Peerless touring car**, with canopy top, used last year only, will sell at less than half original cost. It was well taken care of and is almost as good as new. Make an offer.

**White touring car**. The best steamer made, is in as good condition as when made. Complete with top, etc., **\$1,200**. Worth \$2,000.

#### AUTOBOATS

One **"Dolphin"** speed launch, built to plans of the original "Dolphin," 25 feet long, 7 h. p. motor, speed 12 miles (guaranteed), has been used but once. Price, if bought immediately, **\$300**.

#### YACHTS

One 20-foot cabin cat as per Rudder plans of "Ring Dove." Price **\$300**.

#### SECOND HAND MARINE MOTORS

I have a large list ranging from  $1\frac{1}{2}$  to 14 horse-power. At very low prices to quick purchasers.

If you do not see what you want write me your requirements, if I have not got what you want I can probably get it

**IF YOU CANNOT PAY CASH I  
WILL MAKE LIBERAL TERMS**

I sell any make of Launch, Automobile or Motor on Installments at Manufacturers Cash Prices

WE KNOW that any high grade  
Automobile maker will furnish

**Continental**



**Tires**

on your machine if you specify it. *Insist on getting the best tires made.*

Write to us at the same time when you order your machine.

**The Continental Caoutchouc Co.,**  
Factory in Europe :: 298 Broadway, N. Y.

## To Cadillac Dealers:←

### Circular Letter No. 13.

As you know, we have had a fire, a bad one, but not as bad as reported, nor bad enough to put us out of business. Our engine factory, machine and power plant are both in full operation. Our ware-house, 300 x 180, with large quantities of material, including two thousand engines and two hundred finished model "A's" is undamaged. This ware-house will be converted into an assembly shop within a week. A large two-story factory near the plant of one of our body makers has a large force of finishers at work on bodies. We have sufficient material coming in to make nearly forty machines per day. The large manufacturers who supplied us with bodies, axles, tires, wheels, frames, chains and other material, have been instructed to duplicate orders already filled. We have lost no tools, dies, jigs, patterns, drawings or special machinery. Our entire force of six hundred employes are now at work. Within thirty days we will be shipping model B's. In the meantime we can fill a limited quantity of orders for model A's. If you cannot hold your trade until we can get machines to you, do not hesitate to save your profit by selling another machine. *if you can get it*, but remember that the Cadillac people have a reputation for hustling, and we are likely under present conditions to be able to fill your order as soon as any other concern who makes goods of our class. We can make no definite promises at this date. If you cannot wait, please cancel your unfilled orders and we will assign them to those who can. We can see no reason why we cannot resume model B shipments in a month. We cannot, of course, fill all our orders in thirty days, but we can begin. Please canvass your trade at once and let us know how many STANDARD machines of each model you will need to fill your orders, and we will try to give you some idea of what we can do.

To the many dealers who have expressed their regrets and assurance of support we wish to say, our loss is great but our energy is greater. We thank you and assure you that we are not discouraged. We feel YOUR loss keenly. We know you need the machines and we will have them for you. Give us a little time is all we ask. We are unable to reply promptly to the many expressions of sympathy from our friends. We know you will pardon us. Give us a little time, and we will make Phoenix look like a "plugged nickel." Yours for a greater business than ever.

**CADILLAC AUTOMOBILE COMPANY,** Member of Licensed  
Auto. Mfrs. Assn. **DETROIT, MICH.**

*P. S.—Contract for rebuilding the burned portion of our plant has been let and work begun.*



# CAUTION!

## Gasoline Automobiles

The following Manufacturers and Importers are licensed under the pioneer Patent Number 549,160, granted to George B. Selden, dated November 5th, 1895, on

In view of their license agreement they and their agents will not sell, keep on hand or in any manner dispose of or deal in directly or indirectly any unlicensed new or second-hand gasoline vehicles, infringing said Selden patent.

Both the basic Selden patent and upward of 400 other patents owned by members of this Association will be enforced against infringers. Manufacturers, Importers, Dealers and Agents, also Users of unlicensed machines, are liable.

### MANUFACTURERS:

Electric Vehicle Co.  
Winton Motor Carriage Co.  
Packard Motor Car Co.  
Olds Motor Works.  
Knox Automobile Co.  
The Haynes-Apperson Co.  
The Autocar Co.  
The George N. Pierce Co.  
Apperson Bros. Automobile Co.  
Locomobile Co. of America.  
The Peerless Motor Car Co.  
Standard Motor Construction Co.  
Waltham Manufacturing Co.  
J. Stevens Arms & Tool Co.  
H. H. Franklin Mfg. Co.

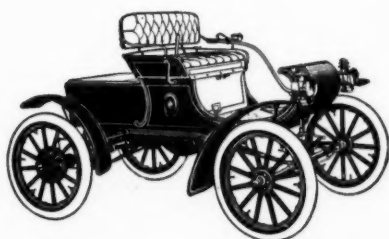
Pope Motor Car Co.  
Smith & Mabley, Inc.  
The Commercial Motor Co.  
Berg Automobile Co.  
Cadillac Automobile Co.  
Northern Mfg. Co.  
Pope-Robinson Co.  
The Kirk Mfg. Co.  
Elmore Mfg. Co.  
E. R. Thomas Motor Co.  
Buffalo Gasolene Motor Co.  
The F. B. Stearns Co.  
Pope Manufacturing Co.  
Sandusky Automobile Co.  
Crest Manufacturing Co.

### IMPORTERS:

Smith & Mabley, Inc.  
Central Automobile Co.  
Alexander Fischer.  
Hollander & Tangeman.  
Standard Automobile Co.

E. B. Gallaher.  
Auto Import Company.  
F. A. La Roche Co.  
Sidney B. Bowman Automobile Co.

**Association of Licensed Automobile Mfrs.**  
No. 7 East 42nd Street, New York.



Price \$650.00

*You see them  
wherever  
you go  
They go where-  
ever you see  
them*



Price \$850.00

# OLDSMOBILE

**"The Runabout the World Knows About"**

On five continents, the OLDSMOBILE is recognized as the standard by which others are tested. For endurance, convenience and unvarying reliability it has no equal. Its 6 H. P. motor equipment is the best ever produced; the ripe product of the largest plant of its kind in the world.

For full particulars regarding our entire line call on our nearest selling agent, or write direct  
**OLDS MOTOR WORKS, 1300 Jefferson Ave., Detroit, Mich., U. S. A.**

MEMBER OF THE ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS.



Rims branded in the channel with this copyrighted mark have been inspected and pronounced perfect. We guarantee our tires only on rims so branded.



## The Pioneer ...Tire...

Experience counts in the making of automobile tires. We have been making G. & J. Clincher Tires for ten years, and know how to make tires that will give the best service. Use the Genuine G. & J. Tires and get the benefit of this experience. They are high grade, reliable tires.

**G & J TIRE Co.** Main Office and Factory **Indianapolis, Ind.**

# SIMPLE AS A · B · C ·

All you have to do is write your name and address in the coupon below—and enclose the coupon with a dollar bill in an envelope—and mail, at our risk, to us—and you will receive a six (6) months' trial subscription to : : :

—25c. a Copy **MOTOR** \$3 a Year—

—The National Magazine of Motoring—

and a free copy of a cloth-bound volume treating upon the care, operation, management, etc., of automobiles—gasoline, steam, electric—authoritatively and thoroughly. It is the

## A · B · C · of MOTORING

"Motor," says a subscriber, "is the one automobile publication which gives me what I wish—entertaining automobile reading, as well as instructive." A reviewer recently said of the A. B. C. of Motoring that it was the epitome of all automobile information.

**MOTOR,** 1789 Broadway,  
NEW YORK CITY

M. A.

MOTOR,  
1789 Broadway  
New York City.

Please send me MOTOR for six months and a copy of the cloth-bound edition of A. B. C. of MOTORING, for which I enclose a dollar bill (sent at your risk).

Name.....

Address.....

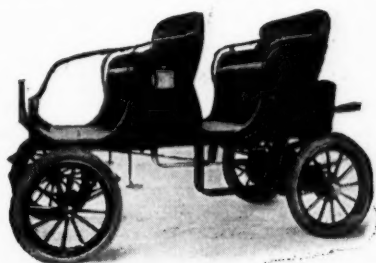


## POPE Waverley ELECTRICS

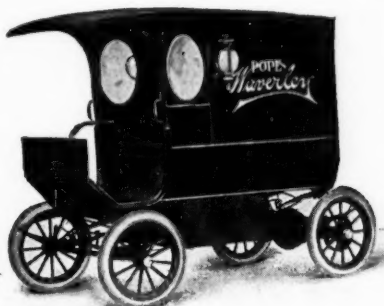
"You See Them Everywhere"



Model 22 Road Wagon Price \$900



Model 20 Surrey Price \$1500



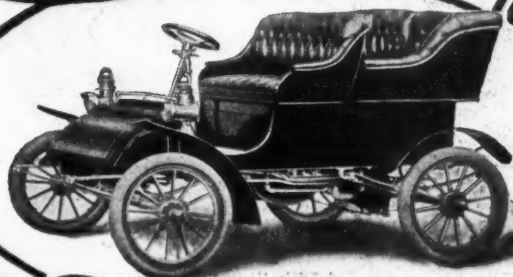
Model 23 Delivery Wagon Price \$1400

Catalogue giving detailed descriptions of the various models mailed on request.

**POPE MOTOR CAR CO.**  
INDIANAPOLIS, IND.

Members Association Licensed Automobile Mfrs.

## Let us tell more about the *Elmore* WITH TONNEAU



# \$850.00

One difference between the Elmore and other cars is that the Elmore combines the luxuriousness, beauty and comfort of the highest priced touring car with the price of ordinary runabouts. Another very important difference is in the efficiency of the motor. This is of a special two-cycle type in which all the disadvantages of ordinary two-cycle engines have been eliminated and our motor has been pronounced by a gas engine expert, "the nearest thing to a steam-engine in the whole vapor-engine world." We wish you knew more about our motor and would like to put into your hand a little book which puts the whole matter clearly, under the title of "One Long Jump and Two Short Steps." Our catalogue will be mailed free.

### The Elmore Mfg. Co.

Members of the Association of Licensed Automobile Manufacturers.

804 Amanda Street, CLYDE, OHIO

## "STEVENS-DURYEA" Gasoline Automobile



### "It Starts from the Seat"

The external appearance of our Runabout indicates its Beauty and Grace. The possibilities of the Driving Power are demonstrated by the recent notable performances in Speed and Hill Climbing contests.

Seven horse-power motor, two cylinders of opposed type; has three speeds and reverses, all operated by the same lever. Seats two or four passengers. Easily operated by a lady.

Send for illustrated catalog and name of nearest agent.

### J. STEVENS ARMS & TOOL CO.

705 MAIN STREET

CHICOPEE FALLS, MASS., U. S. A.

Member Association Licensed Automobile Manufacturers.



## Locomobile Gasolene Touring Cars.....

Front Vertical Motors only. Good Material. Good Workmanship. Careful Finish. Special Equipment. Arrange for demonstration of **running qualities** at any branch office. We can make prompt delivery on account of unequalled manufacturing facilities, and because **our car is not an experiment.** Prices \$2100 Upwards.

**The Locomobile Company of America,**

BOSTON: 15 Berkeley Street  
NEW YORK: Broadway, Cor. of 76th Street

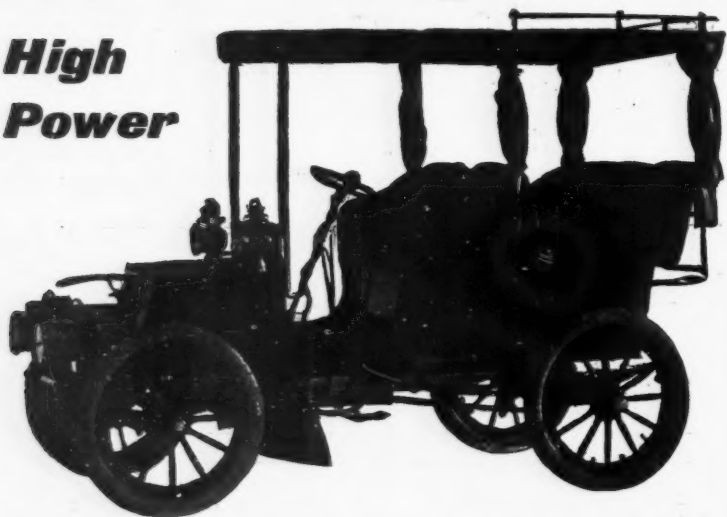
Member Association of Licensed  
Automobile Manufacturers.

**Bridgeport, Conn.**

CHICAGO: 1354 Michigan Avenue  
PHILADELPHIA: 249 North Broad Street

## APPERSON

**High  
Power**



## TOURING CARS

Our twenty-four horsepower, two-cylinder opposed motor located under bonnet is the most powerful two-cylinder motor used on any car made. Easily as accessible as any four-cylinder motor. A large, roomy car for either four or six passengers. Early delivery for those ordering promptly.

**The Best Car Built in America  
For the Average Man to Run**

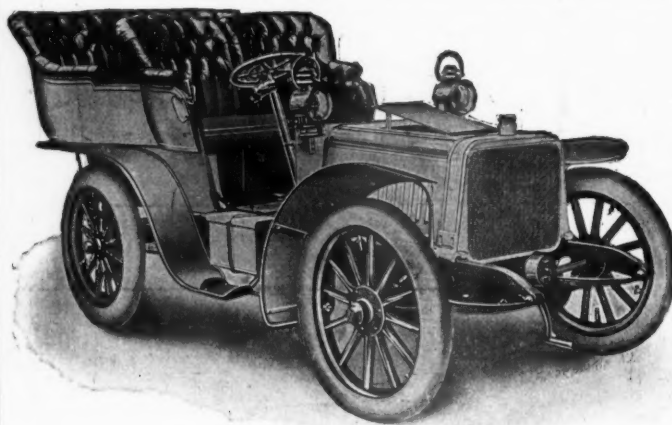
Write for prices and deliveries

**Apperson Bros. Automobile Co., Kokomo, Indiana**

Licensed Under Selden Patent  
CHICAGO BRANCH: 394 Wabash Avenue

## DARRACQ MOTOR CARS

Triumph over them all—First in Records, First in Sales, First in Reliability. 12, 15-20, 24-28, and 30-35 horsepower. Any style body desired. The Double Phaeton, with side entrance, and Tulip with swinging front seat, are the leaders.



Model 1904 "King of the Belgians" Four-Cylinder Touring Car  
in 15-20, or 30-35 horsepower.

**American Darracq Automobile Co.**

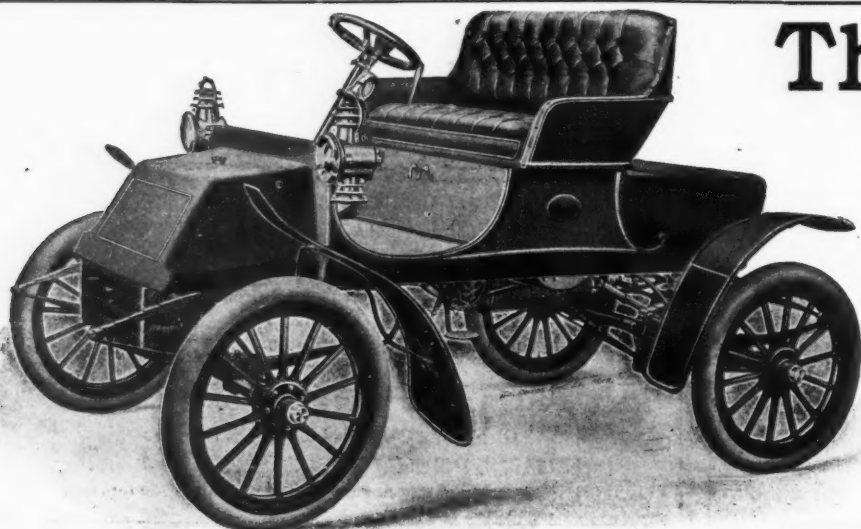
Controlled by F. A. La Roche Company

Sole Agents and Licensed Importers under Selden Patent 549160.

652-664 Hudson St. and 147 W. 38th St., New York

### AGENCIES

Chicago, RALPH TEMPLE AUTOMOBILE CO.; Detroit, W. A. RUSSELL & CO. Philadelphia, 262 N. BROAD ST.



## The Clarkmobile Touring Runabout

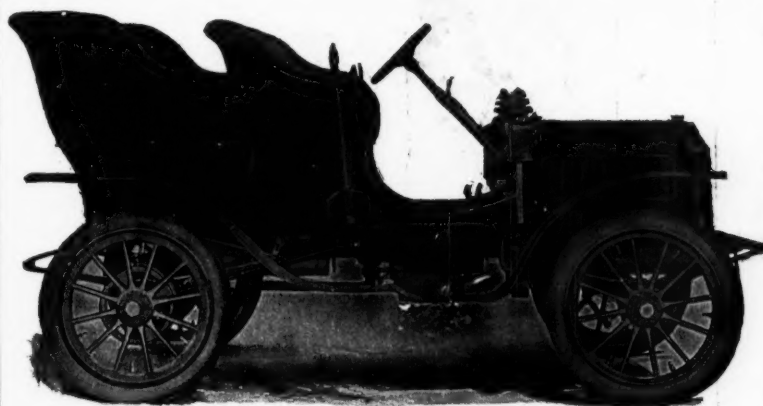
**"It Goes and Goes Right."**

Ready for prompt shipment. 78-inch wheel base, 30-inch fourteen spoke artillery wheels, 3-inch detachable tires, 7 horse-power motor, widest seat on any Runabout. Luggage space in hood. Finest dark red body and lighter red gear

**Price \$750**

**THE CLARKMOBILE CO., Lansing, Mich.**





## National Motor Vehicle Co.

BOTH POWERS ELECTRIC—GASOLINE

Ample Battery, large Tires, efficient Motors, a complete line. Western, Exide or Edison Batteries. Run-a-bouts, Stanhopes, Traps, etc., etc. Four Cylinders at price of two. Bevel Gear at price of Chain. Pressed steel frame, Double Steering connection, Roomy Tonneau.

4-Cylinder, 3 3/4 x 4, . . . \$2,000  
4-Cylinder, 5 x 6, . . . \$3,000

Get our Catalogue and Circulars.

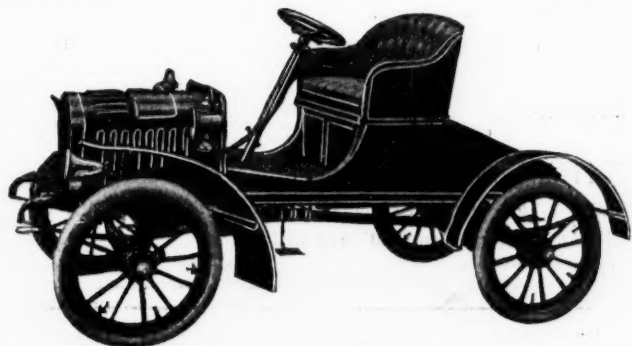
NATIONAL MOTOR VEHICLE CO. 1200 E. 22nd Street,  
Indianapolis, Ind.

## THE CAMERON CAR

\$650

With Detachable  
Tonneau . . . . .

\$750



The Fastest and Most Satisfactory Runabout  
on the Market.

## IMMEDIATE DELIVERIES

The Specifications Show its Unusual Value. Send for Them.

**BEST** CONSTRUCTION  
MATERIAL

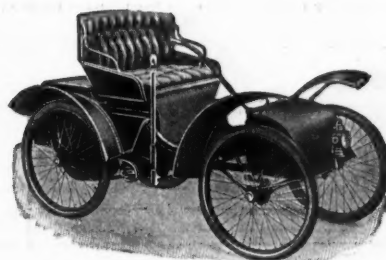
GUARANTEED FOR ONE YEAR.

Agents Wanted in Unoccupied Territory.

**UNITED MOTOR CORPORATION, Pawtucket, R. I.**

Some Pointers about the

## THE MICHIGAN AUTOMOBILE



A finished product...A strong hill climber...Air-cooled motor—nothing to freeze....Easily controlled....New tires very cheap compared to larger cars....Carries two persons easily—plenty of room....Easy to learn to handle....Costs but little to run it....Cheaper than horses....Runs easily twice as fast....Never gets tired. Perfectly practical on ordinary roads...Goes and comes back....Frequently called "a beauty"....Made of the best materials...Highest mechanical skill... And the price...ONLY..... **\$475**

MANUFACTURED BY

**Michigan Automobile Company, Ltd.**

Kalamazoo, Mich., U. S. A.

BEAUTY  
AND  
EFFICIENCY



POWER  
STRENGTH  
SIMPLICITY

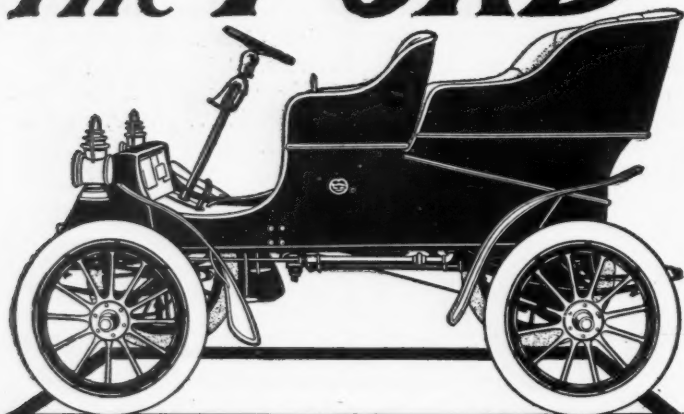
SEE IT AT YOUR THOMAS AGENCY, OR WRITE FOR CATALOGUE

**E. R. THOMAS MOTOR COMPANY,**

1202 Niagara Street  
**BUFFALO, NEW YORK, U. S. A.**

Members of the Association of Licensed Automobile Manufacturers.

# The FORD



OUR claim for the superiority of the Ford double opposed motor over the single cylinder is substantiated by the fact that without an exception all the \$2,000.00 to \$5,000.00 cars have two or more cylinders.

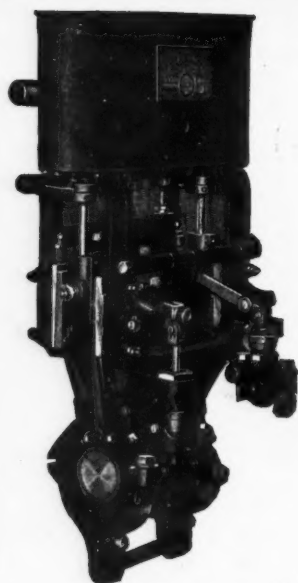
The Ford gives greater satisfaction and equals in speed, reliability and comfort any car sold at less than \$2,000.00.

**Price, with Tonneau, \$900.00**

We agree to assume all responsibility in any action the Trust may take regarding alleged infringement of the Selden patent to prevent you from buying the Ford—"The Car of Satisfaction."

Write for illustrated catalogue and name of our nearest agent.

**FORD MOTOR CO., - - DETROIT, MICH.**



The...

# NEW MASON

(Model "C")

includes all of the many excellencies of the original Mason Engine, with additional features, which give it a still greater lead ahead of all other steam auto engines.

We have made, operated and repaired more steam auto engines than any other concern, and have concentrated in the "Model C" all of the experience gained by this wide observation of all other engines.

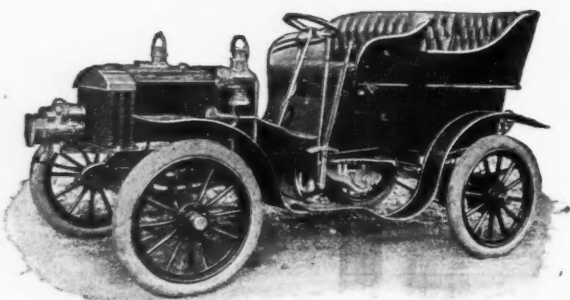
Our "Model C" catalogue will tell you all about this engine, and prove interesting to every autoist. It will be a pleasure to mail you a copy. :: :: :: Send postal card for it to-day.

A full line of parts for all Mason Engines will be found at 147 Queen Victoria St., London, England.

**THE MASON REGULATOR COMPANY**  
158 SUMMER STREET, BOSTON, MASS.

Kindly mention this publication in writing.

# NO STOP-OVERS ALLOWED



Do your touring in one of the St. Louis "Rigs that Run" and you don't need them. The St. Louis combines

**SIMPLICITY,  
ELEGANCE,  
DURABILITY**

What more do you want? We can give you anything from the Doctor's Favorite—our standard car—to the three cylinder, which beats them all. Write for catalog.

**St. Louis Motor Carriage Co.**  
St. Louis, Mo.

# NORTHERN AUTOMOBILES

Northern

Runabout

6½ Horse Power

Price \$750



**Pivotal Body Bearing** absorbs all vibrations from wheels and motor, while special safety device prevents the "back kick" of the motor.

**Extremely Heavy Running Gear** withstand any abuse on rough country roads; axles are guaranteed against breakage during the life of the machine.

**NORTHERN MANUFACTURING CO.**  
Detroit, Mich., U. S. A.

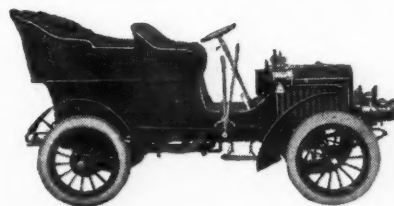
Member National Association Licensed Automobile Manufacturers.



# The YALE Touring Car \$1500.00

A dealer who sells a Yale Car has done two things: He has made a profit and a friend—sometimes the friend is worth more than the profit.

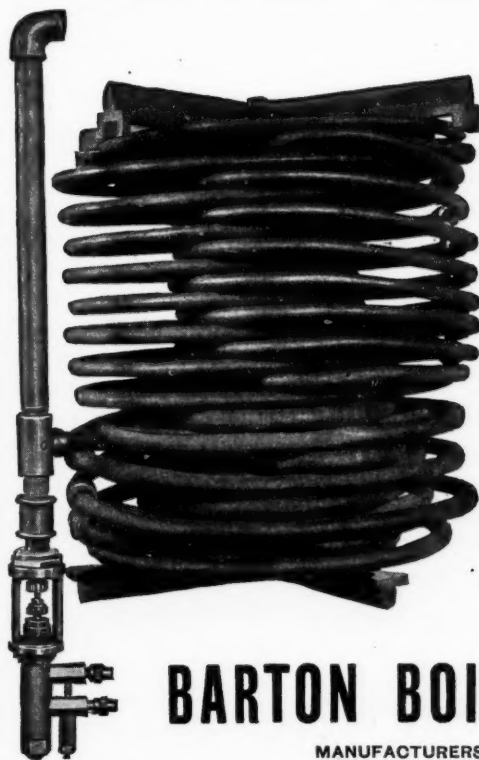
The Yale "shows up" more for the money than any car made. The Yale is the car that will appeal to the greatest number of people. Its cost is but little greater than that of an inefficient runabout and it offers every advantage of the highest priced cars. You should have our catalogue—and, better still, see the car. It is the car with which you can make profit and friends—and that's good business.



**THE KIRK MANUFACTURING CO., 955 Oakwood Ave., TOLEDO, OHIO**

Members Association Licensed Automobile Manufacturers.

## NEW STEAM SYSTEM BARTON STEAM GENERATOR



Work Automatic

ROSENE  
BURNER

No Boiler or  
Burner Troubles

Special quotations  
to manufacturers.

Write for our cat-  
alogue of complete  
system.

KEROSENE  
BURNERS  
CONDENSERS.

**BARTON BOILER CO.**

MANUFACTURERS OF

Full Line Flash Steam Appliances.

4212 to 4230 State St.,

CHICAGO, U. S. A.

## DIETZ Lucifer Gas Lamp



★  
As simple to use  
and operate as  
an oil lamp. Send  
for circular about  
it and our new  
styles of  
OIL LAMPS

★  
**R.E. Dietz Co.**  
37 Laight St.  
New York, - N. Y.  
ESTABLISHED 1840

After you have tried other  
lamps and found them want-  
ing, investigate the

**Richmond  
Automobile  
Lamps**

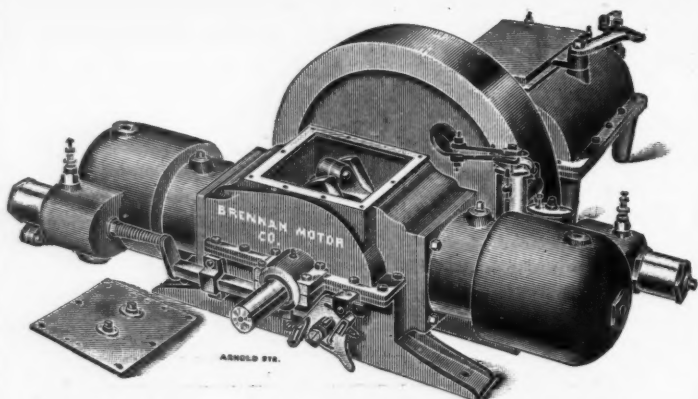
They will suit you.



Richmond Lamps are bet-  
ter than other lamps because  
they are made better—on bet-  
ter principles—they give more  
light and wear longer.

Our catalogue No. 4 tells  
all about them. Shall we  
send it to you?

**Richmond, Ind. Mfg. Co.**  
RICHMOND, - - INDIANA



Sizes 8 to 30 H. P. Special 14 H. P. 1904 Model with Transmission.

**Before You**

buy an automobile, it would pay you to investigate the motor problem. For the sake of economy in manufacture, many automobile builders either make or buy cheap engines. You pay enough for an automobile to get a good engine. It is the vital part of the machine. If it is a

## BRENNAN MOTOR

You know it is STANDARD, and that  
:: you will have satisfaction ::

The tendency of the times are high powered cars. If you have not

## SUFFICIENT POWER

write us. We can furnish you with a practical powerful motor ready to set up in your car with full working drawings of any standard makes of cars.

BRENNAN MOTOR CO., Syracuse, N. Y.

# Fisk Tires

OVERCOME TIRE TROUBLES.

Air Chambers  
Entirely Above Rim.

Simply  
Removing Bolts  
Allows Free Access  
For Repairs.

SIMPLICITY IS THE  
IMPORTANT FEATURE.

Mechanically  
Fastened so that  
Tire Cannot  
Roll or Creep.

Can be  
Easily and  
Quickly  
Repaired  
on the Road.  
Only tool  
necessary  
to remove  
Tire is a  
Small  
Wrench



## Fisk Rubber Company

CHICOPEE FALLS, MASS.

Branches and Repair Depots:

Boston, Washington, Chicago, Denver, Springfield,  
Syracuse, St. Louis, San Francisco, New York, Buffalo, Omaha,  
Los Angeles, Philadelphia, Detroit, Minneapolis, London, Eng.

# DON'T WORRY

## THE B-OK TIRE

does away with worry, making automobiling a constant pleasure. ¶ In ordering your car insist on having B-OK's, thus insuring yourself on tires. ¶ They give you comfort in mind and body. . . .



"The Tire That Tires Last"

## THE B-OK TIRE CO.

1312 Michigan Avenue

Chicago, Ill.



THE OLD WAY

## The Hill Automatic Starter

Can be attached to any Gasoline Car.

The operator mounts the car, pulls a small valve lever, throws in the clutch and the car moves off.

Write us what car you use, and we will tell you all about it.

THE STEEL BALL COMPANY  
840 Austin Ave.....Chicago, Ill.



THE NEW WAY



# IT KNOWS NO CLASS DISTINCTION



9-inch Searchlight on 60 H. P. Mercedes

THE RICH FIND IT MOST SATISFACTORY

THE "POOR" FIND IT MOST ECONOMICAL

THE RECENT REDUCTION IN PRICE OF THE FAMOUS

## RUSHMORE SEARCHLIGHT

PLACES IT WITHIN THE REACH OF ALL

Rushmore Dynamo Works  
PLAINFIELD, N. J.



8-inch Searchlight on 4 H. P. Oldsmobile

## LAMINATED WOOD BODIES=SEATS=MUD GUARDS

*Let Us Quote You Prices on These Goods.*

THE AUTO BODY CO., LANSING, MICH., U. S. A.

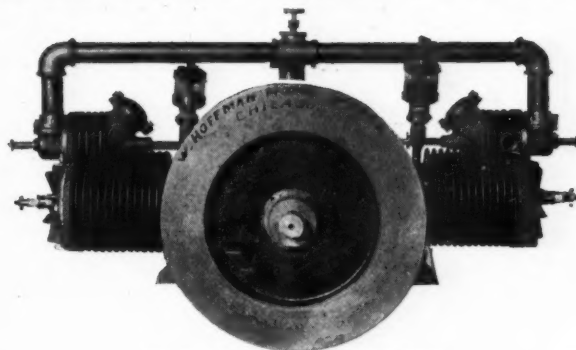


## A Guarantee of Gear Quality

is the above trade mark. It shows that we cut the gears on which it appears and guarantee them to be the accurate kind that transmit power with the minimum amount of waste. Let us quote you prices.

THE NEW PROCESS RAW HIDE CO.,  
SYRACUSE, N. Y.

## BICYCLE & AUTO ENGINES —1¼ to 30 H. P.— ...AIR OR WATER COOLED...



7 H. P. Approved Air Cooled Engine.  
W. HOFFMAN MOTOR WORKS, 1253 N. Halsted Street, Chicago, Ill.

## AMERICAN Indestructible Sparking Plugs



Stand the Test where all others are Knocked Out of Business. Every one we sell brings us more business. This fact shows what they are. The Original and Only Double Insulated Pure Mica Core. All others are worthless imitations.

AMERICAN COIL COMPANY  
West Somerville, Mass.

AUTO SUPPLY CO., Broadway, Cor. 50th St., New York Agents.

## REPAIR MEN—Don't Vulcanize Your Tires!

We have just what you are looking for.

## THE M. & M. CEMENTS AND ACID CURED SOLUTION.

Why not repair your tires and inner tubes with our Acid Cure? It is impossible for a splice or repair to break or come loose. Heat or hard usage has no effect. Do away with your cumbersome presses and steam boilers for patching inner tubes. After a repair is once made and cured with **The M. & M. Acid Cure Solution** the patch will be a part of the inner tube, and can not be separated without tearing. It is the only cement and solution that can be used successfully to put on **Semi-Cured Treads**. This Cement and Solution is used in France and Germany by all Chauffeurs. The M. & M. Cement and Acid Cure Solution is recommended by all leading tire manufacturers, and is without an equal from every standpoint.

**No Repair Man Can Afford to be Without It.**

The M. & M. Acid Solution does the curing.

**1 Pint of Cement and Solution, \$2.00. 1 Quart, \$3.75.**

Write for special prices on gallon lots.

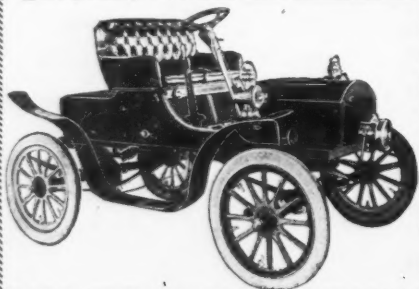
We put up sample outfits of this Cement and Solution for auto owners at 60c. Repair men write for sample of cement and solution.

**M. & M. Mfg. Co., Akron, Ohio.**

# The Courier

Built for American Roads

Mud, Sand and Hills shrink before it. A model of simplicity. Quiet, Safe, Powerful and Economical. More power per pound than any other car on the market.



Cylinder 4 5/8 x 5 3/4. The only Runabout equipped with sliding Gear Transmission on the market to-day. Agents wanted. Write for prices and catalogue.

Sandusky Automobile Co.,  
Members of the Association  
of Licensed Automobile Mfrs.  
1108 Camp Street  
SANDUSKY OHIO

# PREMIER

"The Quality Car"

Rushing up hill at 20 miles an hour, where other cars take the low gear. Four cylinders (air cooled) do the work. Engine in front and accessible. Coil on dash. Oil pump. 16 H. P. to 1400 pounds. 32x3 1/2 inch tires; inclosed rear axle; powerful transmission. Every part built to wear and to stand the strain of American roads.

The Premier, a quality car for the gentleman driver who wants power, speed and accessibility. Get a catalogue.

**Premier Manufacturing Co.**  
INDIANAPOLIS, IND.

JOHN WANAMAKER, New York and Philadelphia Distributor.  
ARTHUR G. BENNETT, 20 Lake Street, Chicago Distributor.

# The Chainless WOLVERINE

A Live Proposition  
For Live Agents

A Few of Its Characteristics Are:

Bevel gear drive with sliding gear transmission, three speeds ahead and reverse.

Speed range from 6 to 35 miles an hour

Long wheel base.

Large, high back tonneau.

Finest leather upholstery.

Space under tonneau floor to carry

extra tire, rain covers, etc.

Brakes positive and operated by foot.

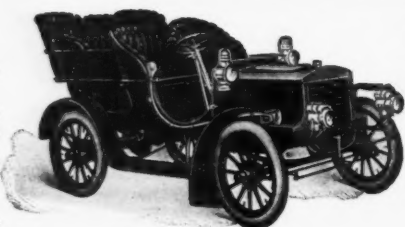
Wheels wooden of heavy artillery pattern, and fitted with

30x3 1/4-inch Diamond Tires.

Ignition by jump spark, automatically controlled

Sight feed oiling device on dash; 500 miles on one oiling.

Beautiful in appearance and handsomely finished.



PRICE  
\$1750

**THE REID MFG. CO., DETROIT, MICH.**

New York Agents: HORACE B. DAY & CO., 60 W. 43d St., near 5th Ave.

M. K. FRANK, 549 Rookery Bldg., Chicago. Distributor for Chicago; THE IRGENS AUTO CO., 1111 Washington St., Oakland, Cal., Distributors for Northern California

# The Lightest Solid Tire



on the market. Adapted to pleasure cars as well as delivery.

Ask the Users

**THE SWINEHART CLINCHER TIRE & RUBBER CO.**

New York Branch: 1784 Broadway

AKRON, OHIO

# MUD GUARDS

To Fit Oldsmobiles  
Or Other Runabouts.

With Forged Irons Ready to Attach.

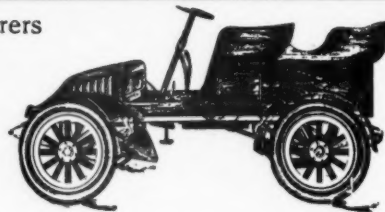
QUICK DELIVERY ON ONE SET  
OR 500 SETS.

Interesting Prices if Ordered at Once.

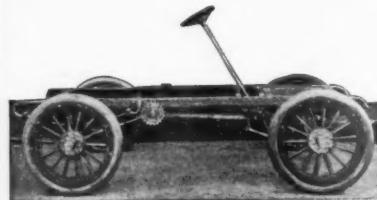
**WILSON & HAYES MFG. CO.,**

750 Bellevue Ave., Detroit, Mich.

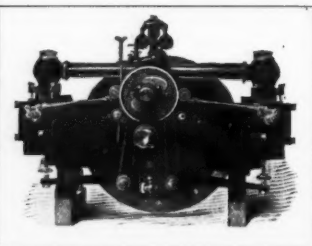
The Largest Manufacturers  
of Automobile Parts  
in America invite  
the assemblers' attention to  
their new prices



We supply parts and  
sundries of every  
description



**J. H. NEUSTADT CO.**  
826-28-30 South 18th St.,  
ST. LOUIS, MO.



Double opposed cylinder, gasoline engines; Horizontal type. Perfectly balanced.

**Practically  
no Vibration**

Perfect throttling carbureter on all engines. 6, 10 and 15 H. P. Also 4 H. P. upright marine engine. Improved carbureters and other accessories.

**THE WESTERFIELD MOTOR COMPANY**

Main and 16th Sts., ANDERSON, IND.

# The Apple

Ignition

AT THE MERCY OF A  
DOOR-BELL BATTERY

Why put \$1,200 to \$6,000 in an automobile and then place yourself at the mercy of unreliable batteries—many no better than the 20c. door bell kind.

The only perfect method of ignition is

**The Apple Ignition Dynamo**

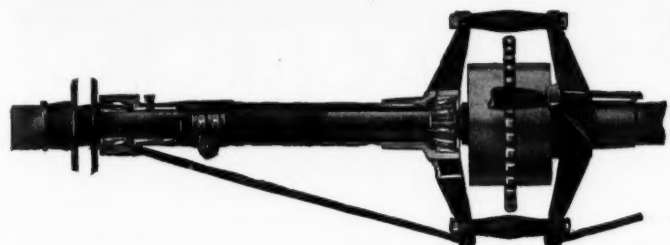
Always reliable. Attached in a moment. No trouble starting engine; makes a hotter, steadier spark that gives same more power and speed. Neat in design, Dirt, dust and oil proof.

Write now for particulars.

THE DAYTON ELECTRICAL MFG. COMPANY, 75 Riebold Building, DAYTON, OHIO







## Steering Knuckles      Rear Axles Artillery Wheels      Front Axles

Only Roller Bearing capable of taking up all wear.  
Warranted for two years.

TIMKEN ROLLER BEARING AXLE CO., - - CANTON, OHIO

## A Chicago Gasoline Storage Outfit is Safe and Economical

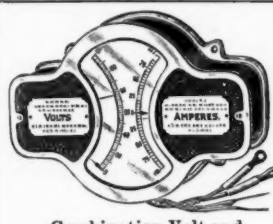


Avoids waste and evaporation.  
Reduces insurance hazard.  
Durable and easily operated.  
Reasonable in price. :: ::

All Claims are Warranted. Write for Particulars.

Chicago Gasoline Storage Co.  
521 Wabash Avenue, - CHICAGO, ILL.

**SOLVES THE**  
**Bullock**  
**IGNITION**  
**PROBLEM.**  
THE BULLOCK-BERESFORD MFG. CO.  
CLEVELAND O



Combination Volt and  
Ammeter, Model R.

## WESTON ELECTRICAL INSTRUMENT CO.

**Electrical Measuring  
Instruments** for use in

Electrical Carriages and Charging Stations

Send for Catalogue.

WORKS: Waverly Park, NEWARK, N. J.  
New York Office, 74 Cortlandt St.



Switchboard Ins't Type K.

**WILLARD  
STORAGE BATTERIES**  
IMPROVED—LIGHT WEIGHT  
THE WILLARD STORAGE BATTERY CO.  
CLEVELAND, OHIO

# RIMS

Electrically Welded

THE BEST STEEL  
BEST WORKMANSHIP  
Make the Best Rims



The Best Rims bear this Stamp  
and are made by

**WESTON-MOTT CO.**  
UTICA, N. Y.

## STANDARD AUTOMOBILE PARTS

Pressed steel frames, pressed steel hubs, malleable hubs, brakes, steering gear, chains, transmission gears, engine cranks, mufflers, front axles (tubular and forged), rear axles (chain and bevel gear drive), electric truck parts.

FEDERAL MANUFACTURING COMPANY, CLEVELAND

SELLING AGENT—HAYDEN EAMES, American Trust Building, Cleveland

## THE "Exide" BATTERY FOR ELECTRIC VEHICLES

DEPOTS FOR THE PROMPT  
DELIVERY AND CARE OF  
EXIDE BATTERIES

NEW YORK, 49th St. and 8th Ave.  
BOSTON, 39 Stanhope St.  
ST. LOUIS, 809 Walnut St.  
PITTSBURG, 5905 Centre Ave.

PHILADELPHIA, 250 North Broad St.  
BUFFALO, 200 Pearl St.  
DETROIT, 265 Jefferson Ave.  
COLUMBUS, 4th and Gay Sts.

CHICAGO, 204 East Lake St.  
ROCHESTER, 158 South Ave.  
TOLEDO, 715 Jefferson Ave.  
DENVER, 1510 Court Place.  
ST. PAUL, 370 Minnesota St.

**THE ELECTRIC STORAGE BATTERY CO. Philadelphia, Pa.**

SALES OFFICES: New York, Boston, Chicago, St. Louis, Cleveland, San Francisco, Toronto, Canada.

# STEARNS

## TOURING CARS

The F. B. Stearns Co., Cleveland, O.

# CARPET

C. COLES DUSENBURY & SON, Manufacturers

396 & 398 Broadway, New York City

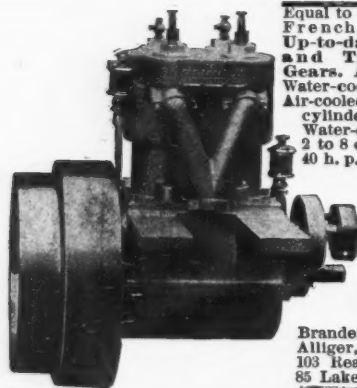
We Manufacture CARRIAGE Carpets and no other kind :: Send for samples



**Going to Ride?** For Pleasure? How can you enjoy it while in constant fear of collapsed tires? On Business? Time is money, and you want no mishap on the way. **The Tennant Pneumatic Puncture-Proof Tire** on your auto guarantees both pleasure and safety. It can neither be punctured nor deflated by cracking or breaking of the inner tube. Our free catalogue, sent on request, tells all about it.

## Tennant Auto Tire Co.

BRANCH OFFICES: (136 W. Main St.) **Springfield, Ohio**  
Tennant Auto Tire Co., 1900 Broadway, n.e. cor. 63d St.  
Tennant Auto Tire Co., 1428 Wabash Ave., Chicago, Ill.  
C. W. Potter, 69 Portland Place, Mont Clair, N. J.  
Pacific Coast:  
Cor. 3d and Los Angeles Sts., Los Angeles, Cal.



Equal to the very latest French productions—Up-to-date Engines and Transmission Gears. Air-cooled and Water-cooled Motors. Air-cooled motors, 1 to 3 cylinders, 2 to 15 h. p. Water-cooled Motors, 2 to 8 cylinders, 10 to 40 h. p.

**Trebert Gas Engine Co.**

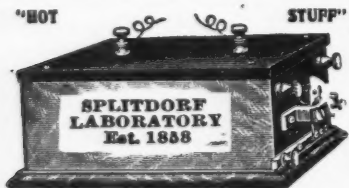
160 Main St. W.  
Rochester, N. Y.

Brandenburg Bros. & Allger, selling ag'ts,  
103 Reade St., N. Y.  
85 Lake St., Chicago.

## Indian Motocycles



**HENDEE MFG. CO.**  
SPRINGFIELD, MASS.



**SPLITDORF**  
COILS :::  
That's all. They tell the rest.  
C. F. Splitdorf,  
17 Vandewater St.,  
NEW YORK.



**STA-RITE**  
"STAYS RIGHT THE LONGEST"

## We Counted Them!

There were 331 motor cylinders with spark plugs in them at the Chicago Auto Show. The STA-RITE was in 103 of these cylinders, and there were exactly twenty-nine different makes of plugs. The reason is—because they stay right longer than any other. We sell each of the seventeen sizes and parts by number and show twelve half-tone cuts in our catalogue. Get one right away.

Auto Jacks and Auto Clicks.

**DETROIT MOTOR WORKS**  
DETROIT, MICH.

THE STA-RITE CO., 529 Broadway, New York and leading dealers  
435 Wabash Ave., Chicago

## THE AUTOMOBILE SUPPLY CO.

Successors to The P. J. Dasey Co.

1339 MICHIGAN BOULEVARD

Parts and Accessories for Builder,  
Repairer and Owner. :: :: ::

## ALUMINUM

Aluminum  
Automobile

Parts a Specialty

The Pittsburgh Reduction Company  
Pittsburgh, Pa.

## KINGSTON CARBURETER



Patented May 12, 1903.  
Other Patents Pending.

**BYRNE, KINGSTON & CO. KOKOMO, Ind.**

Gives perfect control over motor and furnishes perfect and uniform mixture at all speeds. Throttle consists of fuel needle point valve and air regulating valve, both acting together by one lever.

Laminated  
Wood  
BODIES  
and  
FENDERS.



AMERICAN VENEER CO., 114 Market St., NEW ORANGE, N. J.

## Lackawanna

IS SYNONYMOUS WITH

## Quality in Motors

Single Chain Drive Transmission. Double Chain Drive Transmission. Center Shaft Drive Transmission.

It's a two-cycle; it's a success. One water inlet, one outlet, one fuel inlet, one exhaust.

Automobile Motors from 8  
H. P. to 24 H. P.

For Prices and Points of Merit, Address

**LACKAWANNA MOTOR CO.**

50 Letchworth Street, BUFFALO, N. Y.

## FRENCH

Lamps, Horns, Goggles, Spark Plugs,  
Pumps, Oilers and Grease Cups.....

The Finest of Everything.

**EMIL GROSSMAN,**

EXCLUSIVE IMPORTER,

Dept. M.

298 Broadway, New York.

THE STERLING ELLIOTT BALL-BEARING

## Turn Table

NOISELESS AND FRICTIONLESS. THREE SIZES—10, 1  
and 12 FEET DIAMETER CARRIES  
3,000 LBS.

**GIBBS-BROWER CO., Sole Agents**

150 Nassau Street, NEW YORK

One of these Turn Tables can be seen at the new salesrooms of the WINTON MOTOR CARRIAGE CO, 1706 Broadway, New York.

## FREDONIA CARS FOR DAILY USE

Send for Catalogue

The Fredonia Mfg. Co., Youngstown, Ohio

# CLOTH

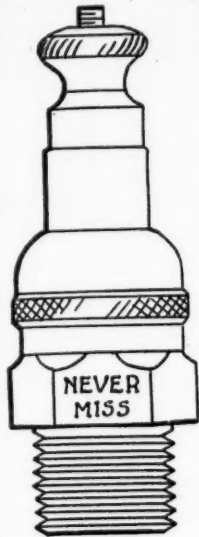
Our specialty—We manufacture nothing but Carriage dry goods—WHIP-CORD—SATIN—LACE, etc., etc.

The largest variety, colors, styles and grades in the U. S. Samples sent.

C. COLES DUSENBURY & SON, 396 & 398 Broadway, N. Y. City



# TRY THE AUTOMOBILE EQUIPMENT CO.'S NEW SPARK PLUG



The  
"Never  
Miss"

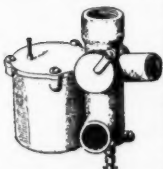
While you are having plug troubles with many plugs, we can save you trouble with one plug. Guaranteed for three months.

PRICE \$2.00.

Imported Porcelains and finest workmanship. If interested write for further information.

**AUTOMOBILE EQUIPMENT CO.**  
261 Jefferson Avenue DETROIT, MICH.

## THE GOULD CARBURETER



Is acknowledged to be the greatest gas-making machine yet produced. We guarantee it to give a perfect mixture of gas in any atmosphere, whether gasoline is good or bad, in warm or cold weather, wet or dry, or whether the engine runs fast or slow, without any adjustment. There is but one lever, the throttle lever, which controls the speed of the engine. There are no moving parts to wear out, no valves to lift, no valve to turn when you start or stop. It is always ready. Price, \$4.50. **GOULD MFG. CO.,** Trenton, N. J. Main Office, 109 N. Broad St. Jno. Howard, Mgr.



## Best Spring Seat in the World.

Used by many of the leading manufacturers. Requires no frame, burlap or webbing. Will retain shape for years. Send for descriptive matter.

BEST QUALITY. LOW PRICE.

**F. H. THOMPSON,**

36-38 Elm Street. PORTLAND, ME.

## THE CHAIN IS A VITAL POINT.

The best known treatment is Pure Flake Graphite in the form of Dixon's Flake Graphite in the form of

**DIXON'S MOTOR CHAIN COMPOUND.**  
3-lb. cakes. Write for new circular (82 G.)  
**JOSEPH DIXON CRUCIBLE CO.,** - JERSEY CITY, N. J.

## Era in Jack Making

# Searls'

### Folding Auto and Carriage Jacks

Remodeled and improved. To range from 8 1/4 inches high up to highest carriage wheels. **Not equaled by all others on earth hunched.** Send for Catalogue  
**JERSEY BRAKE CO.,** - Newark, N. J.

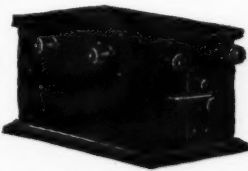
Please Mention Motor Age

"THE WORLD'S BEST BY EVERY TEST."

## AUTO LEATHER.

The special finish of our Automobile leather makes it impervious to dust or rain, and enables it to be easily restored to all of its original brilliancy and depth of color, by using a damp cloth. Our dull finish trimming leather is without an equal from every standpoint. No manufacturer can afford not to see our samples and learn our prices before purchasing trimming leather.

**AMERICAN OAK LEATHER COMPANY,**  
Cincinnati, Chicago, St. Louis, Boston.



## Jump Spark Coils

For Automobile, Launch and Stationary Engines  
**The Induction Coil Co.**  
Milwaukee, Wis.

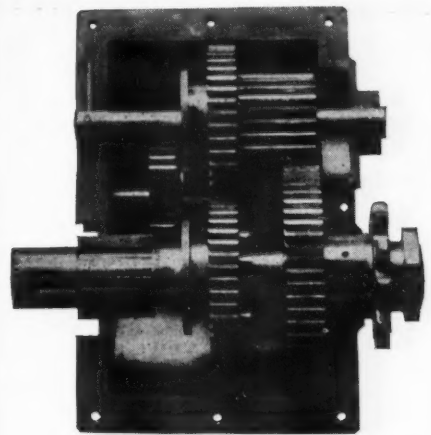
Agencies: The Sta-Rite Co., Room 30, 529 Broadway, N. Y.; Neustadt Co., St. Louis; F. Bissell Co., Toledo; 435 Wabash Avenue, Chicago; R. McQuat, Indianapolis.

## IF YOU WANT CATALOGS

of any of the advertisers write a line to us enclosing stamps to cover postage

## MOTOR AGE

1303 Michigan Avenue.....CHICAGO



## The BUCKEYE

### SLIDING GEAR TRANSMISSION

Reliable  
Efficient  
and  
Noiseless

NO GEARS IN MESH ON HIGH SPEED

**Buckeye Motor Co.**  
COLUMBUS, OHIO

**LEON RUBAY'S**  
AUTOMOBILE ELECTRICAL APPARATUS  
of J. JACOTTE & CIE  
PARIS

SOLE REPRESENTATIVE  
UNITED STATES  
AND CANADA

**INDUCTION COILS**  
Lacoste—none better.  
Accumulators, Ignition Controllers, Sparking Apparatus, Ratchets, Interrupters, Intensifiers, Spark Plugs, Manometers, Voltmeters, etc., etc.  
Continental and Michelin Tires

136 WEST 38th STREET  
NEW YORK  
TELEPHONE 4722-367

NEW YORK  
PARIS

The Standard for Years

## SOLAR LAMPS

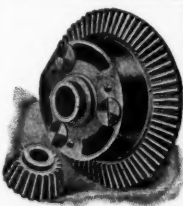
A complete line of Head, Side and Tail Gas and Oil Lamps.

**BADGER BRASS MFG. CO.,** Kenosha, Wis.

**DYNO** Dissolved in Gasoline will

**INCREASE THE POWER OF YOUR MOTOR 5 to 15 PER CENT**

Sample and full directions, 25c.  
**AUTO ACCESSORIES CO.,**  
99 Mueller Ave. Cleveland, O.



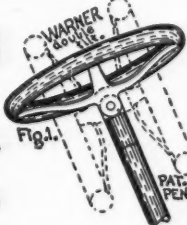
## Warner Differential Gears

All Sizes for Both Sprocket and Bevel Gear Drive. **Satisfaction or "No Pay"**

**WARNER "DOUBLE TILTING" STEERING WHEEL**

Send for Sample on Approval. Cat. Free.

**Warner Gear Co.,** - Muncie, Ind.



## AUTOMOBILE PARTS

METAL STAMPING

## MANUFACTURERS ATTENTION!

Engines, Transmissions, Carburetors, Pumps, Lubricators, Steering Wheels, etc.

We are now making contracts for all kinds of machine work, metal stamping, special tools and dies, also complete parts. You undoubtedly have a certain amount of work on hand, which could safely be made outside of your own factory, which would be of some assistance to you and for which we may be especially adapted. Our specialty is **Contract Work**. Write us.

**OTTO KONIGSLOW,** . . . **CLEVELAND, OHIO.**

Ball Races, Dust Rings, Retainers, Radiator Discs, Washers, etc.

## The Edisona Non-Soot-Proof Spark Plug



During our extensive experience with the so-called soot-proof spark plugs, we have found that it is impossible to construct an absolutely soot-proof Plug, and with this idea in view we have constructed a plug that is as near soot-proof as possible to make, and one that can be cleaned, taken apart and replaced in a minute by simply removing one nut. We use no packing, cement or other useless articles, and our plug will hold compression better than any plug now on the market. All parts of the plug are allowed to expand.

Order one of these Edisona Non-Soot-Proof Spark Plugs and enjoy your ride without having ignition troubles.

The W. L. EDISON AUTO SPECIALTY CO.  
717 Thirteenth Street, Washington, D. C.

## The Rutenber Motor

More Power, Less Parts and No Vibration.  
Superbly Built, and of the Best Material.

THE WESTERN MOTOR CO., Logansport, Indiana.

Think it over, please, will you buy FLUID OILS and OIL the ROADS, or buy half the quantity of

## NON-FLUID OILS

and OIL ONLY the BEARINGS of your car.

IT'S UP TO YOU.

Free Samples on request; ask your dealer or write us.  
N. Y. & N. J. LUBRICANT CO., 14 & 16 Church St., N. Y. City  
14 McAllister St., San Francisco, Cal.

## MOTORS

Write for Catalogue

Buffalo Gasolene Motor Co., Buffalo, N. Y.

## GRAY & DAVIS

AMESBURY, - MASS.

Makers of Good

## AUTOMOBILE LAMPS

Send for Catalog

SPECIAL BARGAINS IN

## LIMOUSINE AUTO BODIES

Suitable for Toledo, Winton, Darracq and Cadillac machines. Also Coupes for lighter machines.  
Canopy tops of all kinds made to order.

## LIMOUSINE AND CARRIAGE MFG. CO.

542 WABASH AVENUE, CHICAGO.

## Motsinger Auto-Sparker

Generator for Electric Ignition.  
Guaranteed for One Year.

Double Opposed and Single Cylinder Motors,  
5x5. DIFFERENTIALS, STEERING WHEELS, Etc.

P. J. DASEY, Mfg'rs Agt., 435 Wabash Av., Chicago

## Briscoe Radiators

Briscoe Radiators, Fenders and parts are used on more Automobiles than all other makes combined. Our catalogue tells you why. Write us a postal for it, now  
Briscoe Mfg. Co., 1427 Woodward Ave., Detroit, Mich.

## Fenders and Parts

## Perfect Ignition

IS OBTAINED BY USING THE

### Ruckert Storage Battery Igniter

Any Voltage or Capacity  
Send for Booklet and Prices

G. R. RUCKERT

13 E. 39TH ST.

NEW YORK CITY

## Kelecom Motors Autolyte Gas Lamps Automobile Horns

Send for Catalogue and Prices.

A. H. FUNKE, 325 Broadway, N. Y.

WINTON COLUMBIA Telephone Main 2179 NORTHERN FRANKLIN

## BATES-ODENBRETT AUTO CO.

Wisconsin Distributors  
Cor. Broadway and Biddle St. MILWAUKEE, WIS.  
STORAGE, CHARGING, REPAIRING

## THE

## Classified

## Advertisements

IN

## Motor Age Produce Results

Persons who patronize these columns once invariably come again. Results are what they want. A better sales medium cannot be found than a carefully worded classified ad. in

## MOTOR AGE.

The expense is nominal—3 cents per word for first insertion and 2 cents for each subsequent insertion.

## Eclipse Pocket Ammeter

for general battery testing, 0 to 15 amperes. Soft-Iron Solenoid type. Ready to use, with flexible cord attached and contact spur in case, which is drawn back into case, when carried in pocket. The contacts, on both cord and case, are made of non-corrosive metal. Size of watch and very light weight. Pivot hardened and polished. Well finished throughout, can be used in any position. Particularly designed for Auto use.



Eldredge Electric Mfg. Co. 227 Main St. Springfield, Mass.

## "STAY-LIT" LAMPS ARE THE BEST

ATWOOD MFG. CO., Makers  
Send for Catalogue. Amesbury, Mass.

## Transmission Gears Sliding Gears Connecting Clutches

COLCORD UPTON,

Office: 144 W. 39th St., NEW YORK CITY

## Herz Oscillum



Will make any spark plug spark. Money refunded if not satisfactory.

Send 50 cents for one today.

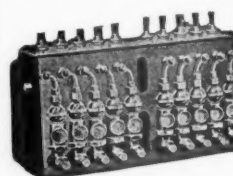
EMIL GROSSMAN,

Dept. M., 298 Broadway New York.

## HOFELLER BRASS FOUNDRY CO.

BUFFALO, N. Y.

OUR ALUMINUM CASTINGS FOR AUTOMOBILES ARE SATISFACTORY. WHY NOT TRY THEM?



## MACHINE LUBRICATION

Obtains Ideal Results.  
Manufacturers Send for Estimates.

JOHN P. McCANNA CO.  
McCORD & CO., Lessees,  
Old Colony Bldg., CHICAGO.



## SPROCKETS

And Equalizing Gears  
In stock or to order. We can save you money. NO ORDER TOO SMALL OR TOO LARGE. Catalogue free.

CULLMAN WHEEL CO.  
521-525 Larrabee St., - CHICAGO.

## YANKEE LINEN DUSTER

PRICE \$3.50

Everything for  
the Automobile

Big illustrated catalogue

E. J. WILLIS CO., 8 PARK PLACE  
NEW YORK

# MOROCCO

Only kind of Leather  
USED FOR FINE VEHICLES

SEND FOR SAMPLES

G. Coles Dusenbury & Son

396 & 398 Broadway :: NEW YORK CITY



## CHICAGO AUTO AGENCIES

**GREER MOTOR CAR CO.** Telephone Harrison 2200  
 SELLING AGENTS FOR **The Courier**  
 508-508 Wabash Avenue, Chicago

**BENZ & CO.** MANNHEIM, GERMANY  
 ESTABLISHED IN 1883  
 THE OLDEST AUTOMOBILE MAKERS IN THE WORLD  
 FIRST CAR PATENTED JANUARY 29, 1886  
 OVER 4,000 NOW IN SUCCESSFUL OPERATION  
 Prices, \$3,500 to \$15,000  
 ALL CARS IMPORTED COMPLETE (LESS TIRES)  
 IMMEDIATE DELIVERY EXCLUSIVE AGENTS FOR U. S.  
**MEAD CYCLE CO., CHICAGO**

**RALPH TEMPLE**  
**AUTOMOBILE CO.**  
 "FRANKLIN" "DARRACQ"  
 "NORTHERN" "STEVENS-DURYEA"  
 Agents Wanted  
 293-295 Wabash Avenue

**The Orlando F. Weber Co.**  
 Distributors of

**"Pope"**  
**Automobiles**

Chicago Store: Milwaukee Store:  
 390-392 Wabash Av. 321-325 Fourth St.

THE LEADERS OF THE WORLD

**Clement-Bayard**  
**Cadillac**

Cadillac Automobile Co. of Illinois, Distributors  
 1312 Michigan Ave. Tel. South 2049 CHICAGO

**Hayden Automobile Co.**  
 1337 MICHIGAN AVENUE  
 CHICAGO  
 NATIONAL QUEEN  
 TOURING CARS LIGHT CARS  
 Long Distance Telephone South 2

**PARDEE & COMPANY**  
 1404-6 Michigan Boulevard  
 Tel. Calumet 2523  
**PACKARD YALE**  
**ELMORE**  
 BUFFALO ELECTRIC STANHOPE

**DAN CANARY AUTOMOBILE CO.**  
 521 TO 531 WABASH AVENUE  
 Largest and Best Equipped Salesroom  
 and Garage in Chicago  
 Agents for the SANTOS-DUMONT

**"THE DOWN TOWN STORE"**  
 20 LAKE ST. Phone Central 3381  
 Open Day and Night. Storage by the Day or Month.  
 Thoroughly Equipped Machine Shop. Only one in  
 the city devoted to Automobile Work.  
 The "Premier"—16-20-40 H. P.  
**ARTHUR G. BENNETT**

**HENRY J. ULLMANN**  
 Chicago Agent for  
**White Touring Cars**  
 and Reading Standard Motor Cycles  
 Salesroom: 1404-1406 Michigan Ave.

**SUPPLIES**  
**DIRT CHEAP**  
 CATALOG  
**THE MOTOR CAR SUPPLY CO.**  
 1427 MICHIGAN AVE., - CHICAGO

Geo. A. Crane, Manager  
**Knox Auto Company**  
 529-531 Wabash Ave. Phone, Mar. 4374  
**WATERLESS KNOX CARS**  
 SINGLE AND DOUBLE CYLINDER  
 Tonneaus, Surreys, Runabouts, Physicians'  
 Cars, and Delivery Wagons.

**"Ford Automobiles"**  
**"Royal Tourist"**  
 Tel. South 512. 1407 Michigan Ave.

**OLDSMOBILE**  
 Agents and Distributors for Illinois and Wisconsin  
**THE GITHENS BROS. CO.**  
 1412 Michigan Ave., Chicago.  
 Telephone, South 1658



Up-to-date, simple, durable, and variable  
 speed four cycle engines. 1, 2 and 4 cyl-  
 inders, for automobile and marine. Revers-  
 ing gears, and transmission. Guarantee  
 with every engine, and prompt deliveries.

**Motor Car Power Equipment Co.**  
 578 Grove St., MILWAUKEE, WIS.

## STANDARD SUPPLIES

Genuine Continental Tires, Funke Autolyte  
 Lamps and Horns, Solar Lamps, Splittorf  
 Coils. All Leading Spark Plugs. Every-  
 thing for Automobile owners and dealers.

**EXCELSIOR SUPPLY CO.,**  
 233-5-7 Randolph St., - Chicago

## Portable Auto. Houses

Has it ever occurred to you that the cost of  
 storage for the next few months would pay for  
 your own house? Write for cuts and sizes to

**SPRINGFIELD MOULDING WORKS**  
 Springfield, Mass.



**HERZ & CO.**  
 55 Grand St.  
 NEW YORK

**You Save**  
**\$1,000,000**  
 worth of trouble  
 by wiring up  
 properly.  
 We send you a  
 complete assort-  
 ment of terminals  
 with full instruc-  
 tions for 60 cts.,  
 postpaid.

## BOSTON AUTO AGENCIES

**"FORD"** P. WILLIAMS, Jr.  
 Tel. 888 Tremont  
**QUICK DELIVERY**  
 147 Columbus Ave., . . . Boston

## MISCELLANEOUS.

ADVERTISEMENTS under this head 3 cents per  
 word first insertion; 2 cents per word each in-  
 sertion thereafter. Cash with order. Express  
 orders, postoffice orders or stamps received.

FOR SALE—Will sell my Boston Model St. Louis  
 Runabout, almost new, and take part pay in  
 good automobile boat. J. R. Woodfill, Jr., Aurora,  
 Mo.

FOR SALE—Locomobile with dos-a-dos seat, steam  
 air pump, newly painted, tires nearly new. In  
 first-class running order; \$275.00.  
 Oldsmobiles and Wintons. Steam outfit, \$100.00.  
 Earl Fisher, 328 E. Market St., Indianapolis, Ind.

DETACHABLE Delivery Bodies. To fit the Cad-  
 illac, Ford and Olds. Send for catalogue. Crum-  
 line Cycle Co., Greenville, Ohio.

FOR SALE—Duryea four-wheeler and Holly tour-  
 ing car. Box 523, Meyersdale, Pa.

FOR SALE—Waverley Electric Runabout. Never  
 been used; slightly shop-worn. With or with-  
 out battery. A bargain. Pope Manufacturing Co.,  
 909 Arch St., Philadelphia.

WANTED—For spot cash money, second-hand  
 motor-cycles. All makes and descriptions.  
 Harry R. Geer, St. Louis, Mo.

FOR SALE—Olds Runabout; perfect order; wood  
 wheels, full leather top, dos-a-dos seat, solar  
 lamps; looks like new. S. F. Marchant, 4366  
 Oakenwald Ave., Chicago.

FOR SALE—8-horsepower marine motors, \$75.  
 Stationary engines, 3 to 15 horsepower. E. H.  
 Clay & Co., Chagrin Falls, Ohio.

WANTED—No. 1 Champion.  
 FOR SALE—A new heavy transmission. Knate,  
 Apollo, Pa.

FOR SALE—Haynes-Apperson 1902 Runabout,  
 with removable dos-a-dos seat and extra tires;  
 first-class condition; price \$750. Call at Loco-  
 mobile Co., 14th and Michigan Blvd., Chicago.

WILL SELL my waterless gasoline Stanhope; big  
 bargain. Address C. A. Ballard, 3271 Beacon  
 St., Chicago.

WANTED—Second-hand runabout; give age, price  
 and full description first time you write. Lock  
 43, Petersburg, Ill.

FOR SALE—1903 Model Locomobile steam sur-  
 rey, in perfect condition, with extra hamper  
 and including a duplicate engine. For price and  
 further particulars address owner, W. H. W., 368  
 Carroll Ave., Chicago.

FOR SALE—Style '05 Loco. surrey; bought new  
 Aug., 1902; fine running condition; Kilinger  
 water gauge; steam air pump; equipment com-  
 plete; cheap. J. W. Harber, Bloomington, Ill.

FOR SALE—Knox Model B, in good condition;  
 run about 2,500 miles; price, cash, \$450. L.  
 E. Reineman, Frick Bldg., Pittsburg, Pa.

FOR SALE—Two-cylinder Pope-Toledo; great bar-  
 gain. M. K. Frank, 549 Rookery Bldg., Chi-  
 cago.

TONNEAUS for 1904 Model Olds runabouts. Send  
 for our 1904 catalogue. Crumline Cycle Co.,  
 Greenville, Ohio.

FOR SALE—2 Haynes-Apperson, 3 Pope-Toledos,  
 6 Oldsmobiles, Rambler, Cadillac, Searchmont,  
 Winton, Autocar, Brazier, Knox, Geneva Steamer,  
 and several Electrics and Steamers; prices \$150  
 to \$3,000. 3 wood wheels for Oldsmobile. Write  
 for list. Geo. W. Mossey & Co., Elwood, Ind.

TONNEAUS. We make them to fit the Cadillac,  
 Ford and Olds. Send for catalogue. Crum-  
 line Cycle Co., Greenville, Ohio.

FOR SALE—\$1,000 Knox runabout, model 1904.  
 Fred Devos, Room 8, 147 Monroe St., Grand  
 Rapids, Mich.

CASTINGS for bicycle motors, 1 1/4 h. p., \$7; 2  
 h. p., \$9; 3 h. p., \$12. W. Hoffman Motor  
 Wks., 1253 N. Halsted St., Chicago.



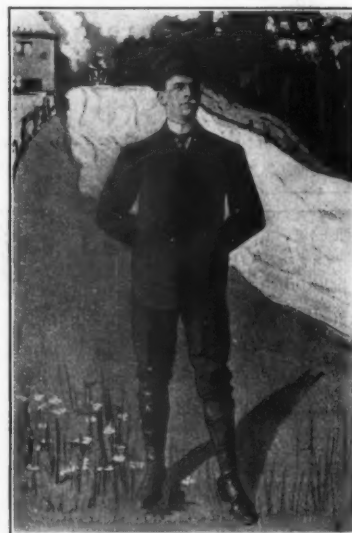
## Automobile and Motor Boat Garments and Requisites

Nature is capricious. Her elements—rain, wind and dust—the autoist finds a penalty to his pleasure. We have more than one hundred distinctive garments which are attributes of it—which insure immunity from the elements, be they ever so fierce. In this country we have exclusive control of the models sponsored by

**O. STROM ET FILS**, of Paris, clever French models of silk, rubber and fabrics.  
**ALFRED DUNHILL**, of London, exclusive tailored garments.  
**OSCAR HENRIQUES & CO.**, of Copenhagen, garments of Danish Leather.  
**SAKS & COMPANY**, of New York, adaptations of foreign models and exclusive patented garments.

Please send for our 96 page Catalogue.

**SAKS & COMPANY,**  
 Broadway, 33d to 34th Sts., . NEW YORK



**FOR SALE**—Special Locomobile, long wheel base, folding front seat, burns kerosene, luggage carrier, Phelps' pump, fuel tank 12 gals., water tank 32 gals., roller chain, first-class condition; run 200 miles. Cost \$1,100. Now \$450. F. O. Bailey Carriage Co., 44 Plum St., Portland, Me.

**FOR SALE**—2 1/4-h. p. Holley motor-cycle; practically new with several improvements. J. L. Carpenter, 554 Fairfield ave., Bridgeport, Conn.

**FOR SALE**—At a bargain; two 12-passenger brakes in good condition and nearly new. Address Famous Mfg. Co., East Chicago, Ind.

**WANTED**—A position as chauffeur. Can do repairing. Call or write, J. Tolland, 67 S. Canal St., Chicago.

**FOR SALE**—Murray Auto, 6 H. P., artillery wheels, new car; \$475. E. R. Kent, Dixon, Ill.

**FOR SALE**—One White stanhope, green panel and gear; the last new one. Regular price, \$1,200, ours \$900. First check takes it. F. O. Bailey Carriage Co., 44 Plum St., Portland, Me.

**FOR SALE**—One Model 21 Waverly, new, 30 cell Exide batteries, just received; first check for \$775 takes it. Catalogue and cut upon request. F. O. Bailey Carriage Co., 44 Plum St., Portland, Me.

**FOR SALE**—An \$850 brand new electric runabout. Exide batteries; also one Woods electric runabout with buggy top, batteries need repairing. Will sell the above very cheap for cash or trade for gasoline runabouts. Northwestern Motor Vehicle Co., 112 S. Sixth St., Minneapolis, Minn.

**FOR SALE**—Cheap—Complete power outfit for automobile; 8 horse power Thomas motor, three speed transmission; carburetor, coil, muffler, radiator. O. K. Machine Works, Ellicott St., Buffalo, N. Y.

**FOR SALE**—One 9 H. P. heavy runabout, only run 100 miles; practically new machine; cheap bargain for cash. William Wegner, 925 Ninth St., Milwaukee, Wis.

**OLDSMOBILE** owners, equip your car with our 100-mile touring Radiator; price complete, \$15. Bliss-Chester Co., Providence, R. I.

**FOR SALE**—One Model A Locomobile touring car, new, folding front seat; regular price \$1,600; ours now, \$800. One style No. 05 Locomobile survey, new, regular price \$1,400; ours now, \$700. Cuts and description upon request. F. O. Bailey Carriage Co., Portland, Me.

**AUTO RUSSES**—Two 16-passenger steam buses and two 9 H. P. delivery wagons. First class condition. Moderate prices. Easy terms. Write for particulars. Peoples Rapid Transit Co., Olneyville Square, Providence, R. I.

**FOR SALE**—Second hand steam, gasoline and electric automobiles. The largest variety under one roof in America. Send 5c in stamps for catalogue. Mississippi Valley Automobile Co., 3935-39 Olive St., St. Louis, Mo.

### TO EXCHANGE FOR AUTOMOBILE.

Twenty acres of land near Corpus Christi, Tex., fronting on the Laguna Madre. Fine location for winter or summer residence. Boating, sailing, hunting, fishing. Fine tarpon fishing waters in front of property. Best offer takes it. Address J. S. Peter, Ft. Worth, Tex.

## Automobile For Sale.

A 1903 White steam touring car, in perfect condition; only used a few months last year; fitted with two side and rear oil lamps, two acetylene head lamps, side baskets and extra vaporizer. Reason for selling, owner has purchased a larger car. Address

**W. C. STERLING, Poughkeepsie, N. Y.**

## For Sale, New White Steam Touring Cars

Only 2 of These NEW 1903 Models Left.

They have about all the 1904 changes, including longer springs, larger axle, new style hood and wind shield. Every man I sold one to is well pleased and I have their letters to prove it. Don't let this chance go by. My price does my talking. If you mean business, ask for it.

**C. C. STOLTZ, - - Marion, O.**

**C. A. COEY & CO.,** 5301 Cottage Grove Avenue.....Chicago

UPON REQUEST WILL MAIL YOU A LIST OF

**GENUINE BARGAINS in USED AUTOMOBILES**

## THE CLASSIFIED ADVERTISEMENTS

IN

## Motor Age

**PRODUCE  
RESULTS**



**Dr. (?) A. L. Dyke is a Specialist in the Diseases of Automobiles**

If your machine bucks, balks or has the symptoms of ague and other "non gone" diseases, then you should consult the doctor. We carry the largest line of imported and domestic Automobile Supplies in America. Get our monthly 48-page Bulletin. Our catalogue contains 180 pages, over 1,000 illustrations of Automobile Supplies. Send 10c to cover postage if not a dealer.

**A. L. Dyke Automobile Supply Co.**  
 1402 PINE STREET, ST. LOUIS, MO.  
 First Auto Supply House in America.  
**SECOND-HAND AUTOS.**



## The "Springfield" Auto Jack

With Quick Acting Square Thread Screw. A combination of Strength, Safety, Simplicity. Actual Lifting Capacity, 2,000 lbs. Lifting Range, from 11 to 18 inches. Weight 4 1/4 pounds.

**PRICE \$2.25 NET**

Express prepaid to any part of the United States.

Manufactured and Warranted by  
**THE SHAWVER CO., Springfield, O.**

## Mechanical Engineer, Automobile Expert.

**JOHN C. HIGDON, Asso. Am. Soc. M. E.**  
 Twenty-five years' experience. Eight in Auto Building. Have designed many successful Engines and Autos complete. Write me for advice on your hard problems.

**REFERENCES FIRST CLASS.**  
**To Buyers:** Ask me to name the best car for a given price. Am not biased in favor of St. Louis or any other builders. Address: 605 Mo. Trust Bldg., St. Louis, Mo.

## QUINBY AUTOMOBILE-BODY DEPARTMENT

1534 BROADWAY, COR. 45TH ST.  
 EMERSON BROOKS, MANAGER.

PHONE 6536 38TH ST.



FOR UNINTERRUPTED EXPLOSIONS AND SMOOTH RUNNING  
 SPECIFY

## "Sperry Sparkers"

WITH YOUR NEW GASOLINE CAR.

**NATIONAL BATTERY COMPANY**

NEW YORK AND BUFFALO





Rims branded in the channel with this copyrighted mark, have been inspected and pronounced perfect. We guarantee our tires only on rims so branded.

---

## The Original American Clincher

### A Tire That Helped Along the Game.

Coming from a factory that has long been recognized as the home of Successful Tires, the users are inspired with a confidence well placed and never abused. We are accustomed to making tires right, and the

## Goodrich Clincher Automobile Tire

is no exception to the rule.

---

**The B. F. GOODRICH COMP'Y**  
**Akron Rubber Works      AKRON, OHIO**

NEW YORK: 68-68 Reade St. & 1625 Br'dway.  
BOSTON: 157 Summer St.  
BUFFALO: 9 W. Huron St.  
SAN FRANCISCO: 392 Mission St.  
DETROIT: 80 E. Congress St.

CHICAGO: 141 Lake St.  
PHILADELPHIA: 922 Arch St.  
DENVER: 1444 Curtis St.  
CLEVELAND: 420 Superior St.  
LONDON, E. C.: 7 Snow Hill.



# Packard



¶ We don't want to ask you to read a discussion of the mechanical features that make the Model "L", 1904, Four-Cylinder PACKARD superior to other motor cars. ¶ All we want to do is to keep the name of our car before you and impress upon you the importance of investigating the Packard before you make your final decision to purchase. ¶ We KNOW just what our car is, and we KNOW that if we can show it to you part by part, let you compare it in detail with others, and let you see how smoothly, how swiftly, how gracefully it runs, and how easily it is operated, that we can convince you that it is the car for you to buy. ¶ Send us your name and we will have our nearest agent give you a real PACKARD ride, and demonstrate to you that the Packard is cheap at \$3,000. :: :: ::

Will you let us talk to you?

---

**PACKARD MOTOR CAR CO., Dept. 3, Detroit, Mich.**

Member Association of Licensed Automobile Manufacturers

**New York Agents: Packard Motor Car Co. of New York, 317-19 W. 59th St., New York City**